TOSHIBA

FILE NO. 020-200507

SERVICE MANUAL

# Projection Monitor

# 51HC85
# 57HC85
# 65HC15
# 65HC85

©TOSHIBA CORPORATION 2005

Published in Japan Jun. 2005 (YC)

# TABLE OF CONTENTS


SAFETY INSTRUCTIONS ..... 3

CRT ASSEMBLY REPLACEMENT AND MOUNTING ..... 4

PICTURE TUBE COMPONENTS ADJUSTMENT ..... 6

REPLACEMENT OF THE CRT ..... 9

SERVICE MODE ..... 10

ELECTRICAL ADJUSTMENT ..... 12

CONVERGENCE ADJUSTMENT ..... 15

SCREEN AND MIRROR ALIGNMENTS ..... 18

CIRCUIT CHECKS ..... 19

SETTING & ADJUSTING DATA ..... 20

ADDING CHANNELS TO THE TV'S MEMORY ..... 23

MECHANICAL DISASSEMBLY ..... 24

CHASSIS REPLACEMENT PARTS LIST ..... 26

PC BOARDS BOTTOM VIEW ..... 36

TERMINAL VIEW OF TRANSISTORS ..... 50

CIRCUIT BLOCK DIAGRAM ..... 53

APPENDIX:

CIRCUIT DIAGRAM

# SAFETY INSTRUCTIONS

**WARNING**: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" INSTRUCTIONS BELOW.

## X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is (A) kV at zero beam current (minimum brightness) under a 120V AC power source. The high voltage must not, under any circumstances, exceed (B) kV.

   Refer to table-1 for high voltage (A), (B).
   (See SETTING & ADJUSTING DATA on page 20)

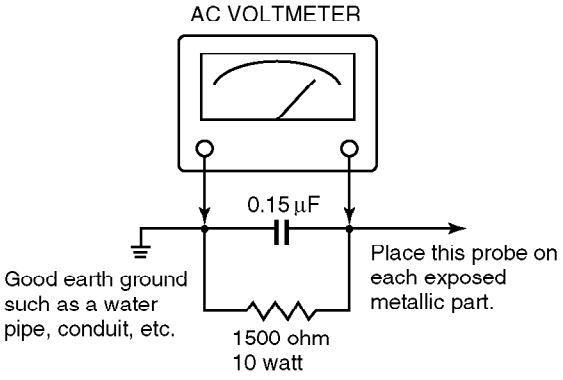
   Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure in this manual. It is recommended that the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
2. This receiver is equipped with a Fail Safe (FS) circuit which prevents the receiver from producing an excessively high voltage even if the B+ voltage increases abnormally. Each time the receiver is serviced, the FS circuit must be checked to determine that the circuit is properly functioning, following the FS CIRCUIT CHECK procedure in this manual.
3. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
4. Some part in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE below.

## SAFETY PRECAUTION

WARNING : Service should not be attempted by anyone unfamiliar with the necessary precautions on this receiver. The following are the necessary precautions to be observed before servicing this chassis.

1. An isolation Transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. Always discharge the picture tube anode to the CRT conductive coating before handling the picture tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled. Use shatter proof goggles and keep picture tube away from the unprotected body while handling.
3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as; non-metallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.
4. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, screwheads, metal overlays, control shafts etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner:

   Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 µF, AC type capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and 0.15 µF capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.675 volts rms. This corresponds to 0.45 milliamp. AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

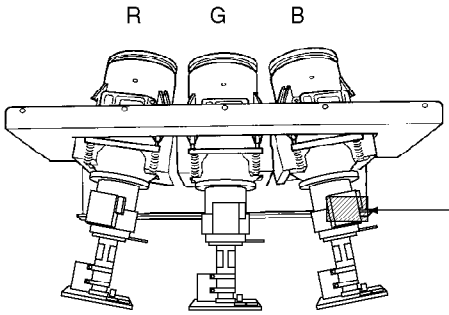

AC VOLTMETER
0.15 µF
Good earth ground such as a water pipe, conduit, etc.
1500 ohm 10 watt
Place this probe on each exposed metallic part.

## PRODUCT SAFETY NOTICE

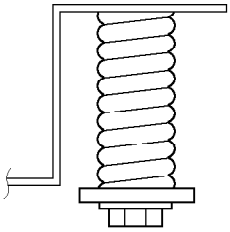
Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.
Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-ray radiation or other hazards.

## CRT ASSEMBLY REPLACEMENT AND MOUNTING

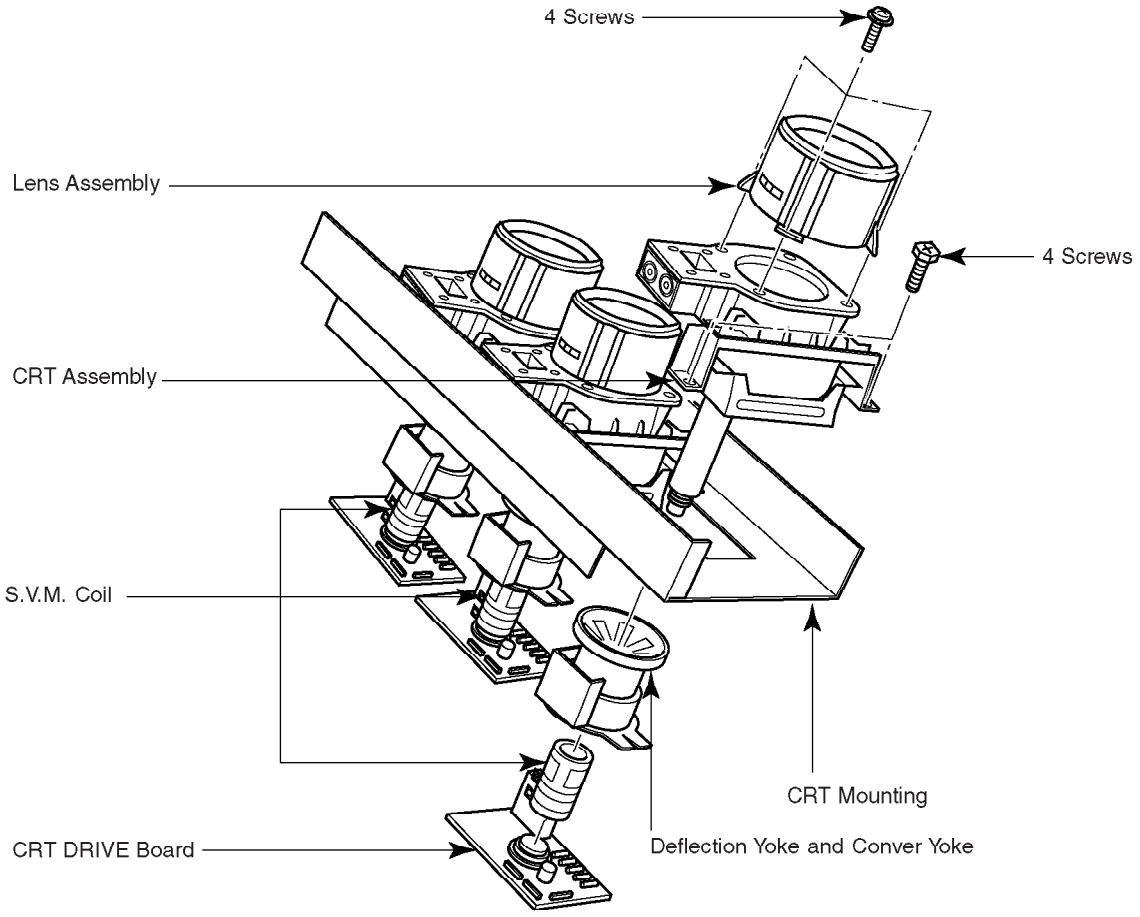
**CAUTION : DO NOT LOOSEN THE HEX HEAD BOLTS WITH SPRINGS (12 PCS), BECAUSE THOSE ARE FOR SEALING OF CRT COOLANT.**




**Attention Serviceman**



The Hex Head Bolts with Springs. (see sketch) used on CRT assembly, are NOT Adjustment Screws DO NOT LOOSEN-FLUID LEAKAGE WILL OCCUR.




**Lens and Neck Components View**

TO REMOVE CRT (Same procedure for R, G, B)

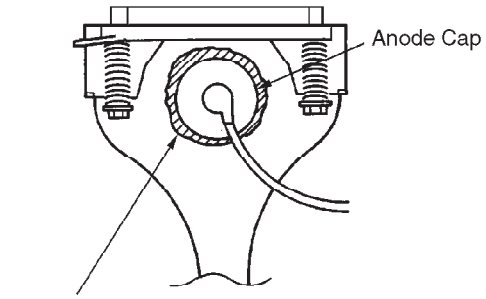
1. Remove CRT DRIVE Board, S. V. M. COIL and DEF. YOKE from CRT.
2. Remove Lens Assembly.
3. Detach CRT Anode Cap from CRT.
4. Remove CRT Assembly from CRT Mounting.

CRT REPLACEMENT (Same procedure for R, G, B)

Reverse the removal procedures except the followings.

1. Anode Cable should be replaced with new one. See "SERVICING PRECAUTIONS" shown below.
2. Install silicon (T461B) to the CRT, replace the Anode cable and put enough silicon again on around the Anode Cap as illustrated.

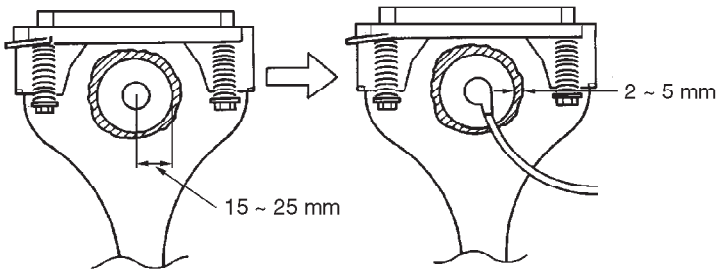
CAUTION: Align the Anode cable as illustrated on page 4.




ADJUSTING PROCEDURE IN REPLACING CRT

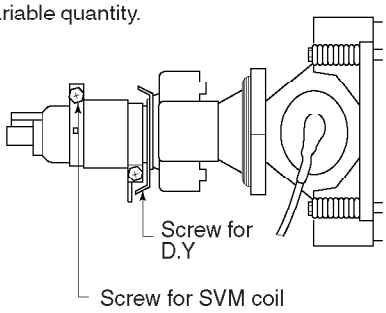
1. R.G.B. FOCUS ADJUSTMENT (page 7.)
2. PICTURE TILT ADJUSTMENT (page 7.)
3. USER CONVERGENCE CENTER CHECK (See owner's manual.)
4. CENTERING ADJUSTMENT (page 7.)
5. CONVERGENCE ADJUSTMENT (page 15.)
6. WHITE BALANCE ADJUSTMENT (page 12.)

Adjustments are complete.



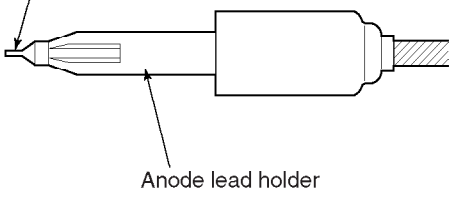

## SERVICING PRECAUTIONS

■ Do not use a magnetized screw driver for screws of Deflection Yoke and Velocity Modulation Coil to avoid magnetization of electron gun. Magnetization of electron gun will degrade basic function and result in unbalance of right and left shift of user static convergence, and result in no variable quantity.




■ When replacing the anode cap assembly (CRT) or anode lead assembly (F.B.T.), remove the anode lead holder from old one and attach the holder again to new anode lead.

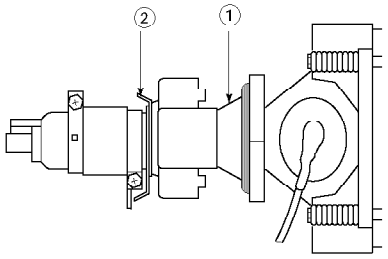
■ Check the point of anode lead in a straight line, if it is winding, please revise it.



**WARNING :** BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 3 OF THIS MANUAL.

# PICTURE TUBE COMPONENTS ADJUSTMENT

## DESCRIPTION OF NECK COMPONENTS




① Deflection yoke and convergence yoke
The position on the neck is required most front (CRT funnel side) and the screw is fastened after rotating yoke adjusting picture tilt.

② Centering magnet
After adjusting picture tilt, picture position is finally fixed by this magnet.
In order to get maximum margin of user convergence control for center of screen, this magnet have to be used for center convergence adjustment.

PREPARATION
Operate the receiver for at least 5 minutes.

## R, G, B FOCUS ADJUSTMENT

1. Before adjusting the R, G, B FOCUS, remove the 4 screws of Lens Assembly which is fixed on the CRT Assembly. (See page 4.)
   Then turn around the Lens Assembly by 180 to adjust the fastening screw (Fig. a) and fasten the 4 screws to secure Lens Assembly.
2. Select the adjustment mode. (See page 10.)
3. Press "7" button to display the built-in cross-hatch.
4. Press "0" and "RTN" buttons to make the picture a single Red color.
   100 button ..... to erase Red color
   0 button ..... to erase Green color
   RTN button ..... to erase Blue color.
5. Loosen the fasten screw and adjust Red lens focus to best focusing point of picture center. Then fasten the screw. (See Fig. a.)

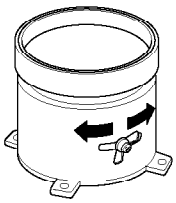


**Fig. a**

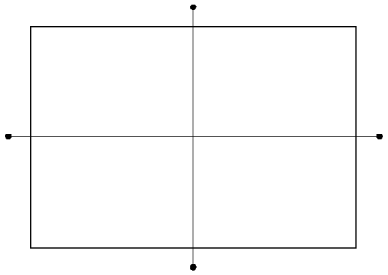
6. Adjust FOCUS VR "R" of FOCUS PACK to find best focusing point of picture center.
7. Repeat steps 3 to 5 for Green and Blue colors.

## TILT ADJUSTMENT

Rotate R, G, B deflection yoke so that picture becomes horizon, then fasten screw.

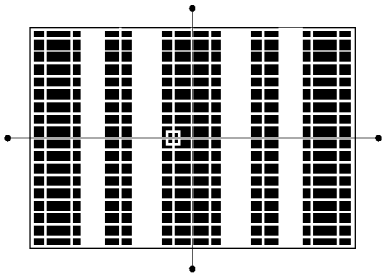
## CENTERING ADJUSTMENT

1. Stretch a thread between two center of screen edge (top and bottom, left and right).



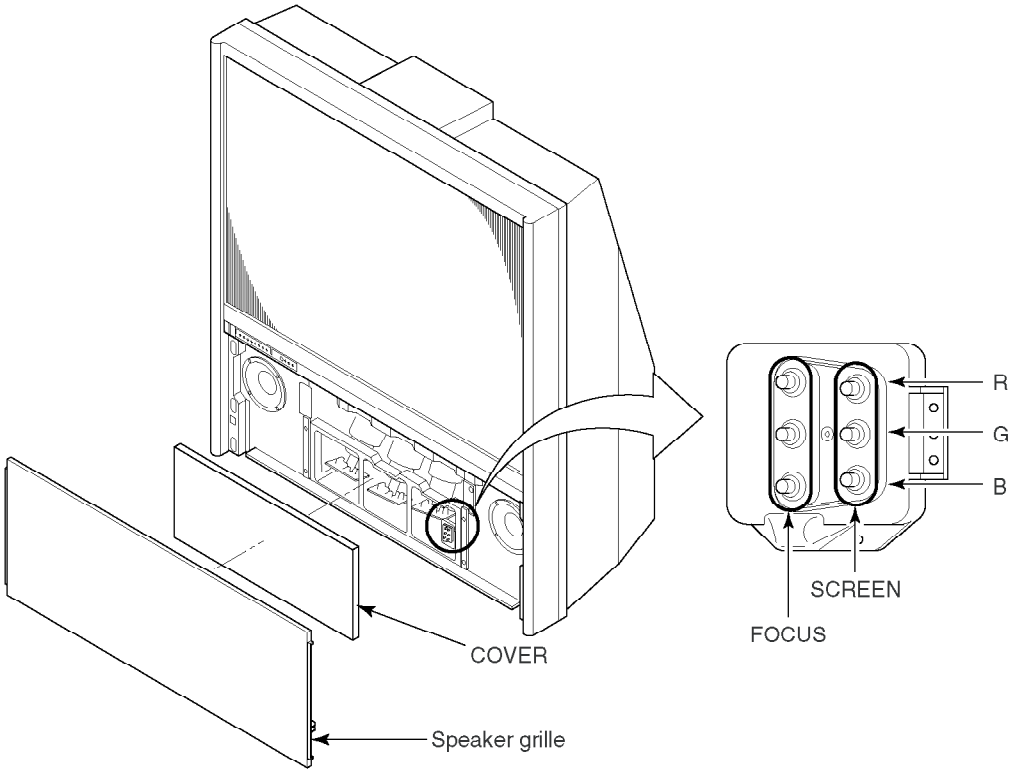
2. Receive NTSC.
   Then select SERVICE MODE. (See Page 10.)

3. Select CONVERGENCE ADJUSTING mode, and press "7" button to display the internal net pattern.
   Move Cursol and recognize horizontal line indicated Y:4. This line is vertical center. Push "9" button to display the vertical stripes, and recognaize horizontal center.



4. Perform VCEN adjustment. (See page 16.)
5. Adjust G centering magnet so that the cross-bar pattern center comes to screen center.
6. Perform HEIGHT adjustment .
7. Perform VERT. LINEARITY adjustment.
8. Perform WIDTH adjustment. (See page 16.)
9. Check whole quality of green line.
10. Adjust R, B centering magnet so that the cross-bar pattern center comes to screen center.

**LOCATION OF SCREEN AND FOCUS VR'S**



# REPLACEMENT OF THE CRT

Service parts are provided for each R, G and B.
The contents of the parts are as follows.

| | R | G | B |
|---|---|---|---|
| 51HC85 | 23078357 | 23078358 | 23078359 |
| 57HC85 | 23447326 | 23447324 | 23447327 |
| 65HC85 | 23447328 | 23447324 | 23447329 |
| 65HC15 | 23447981 | 23447982 | 23447983 |

**REPLACEMENT OF HIGH VOLTAGE CABLE**

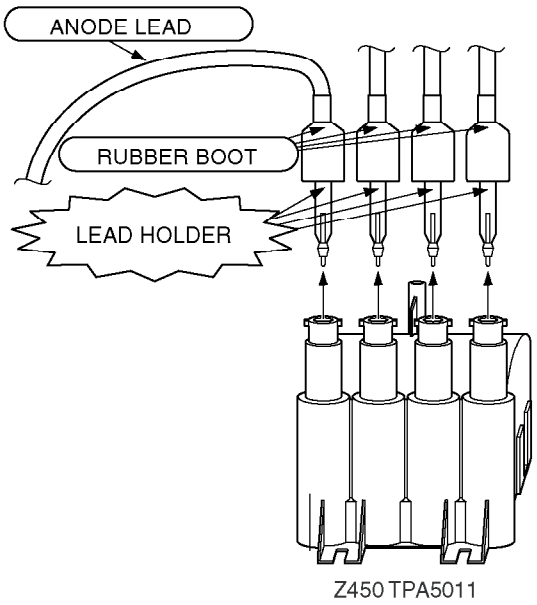



**Fig. a**

1. When replacing Anode Lead or Anode Cap with new one, remove Lead Holder from old lead as shown in figure below, and put it on new lead. Do not throw away Lead Holder.

**NOTE : THE LEAD HOLDER IS ATTACHED TO TPA5011 (Z450), BUT IS NOT ATTACHED TO ANODE LEAD AND ANODE CAP. RUBBER BOOT IS ATTACHED TO ANODE LEAD AND ANODE CAP.**

2. Detaching Lead Holder

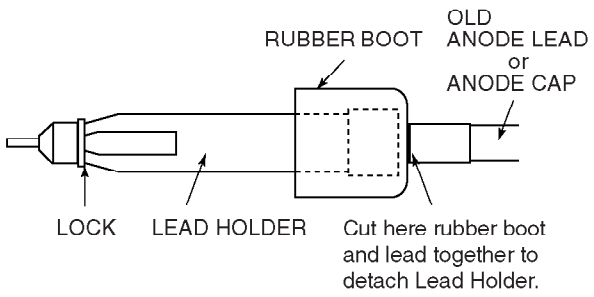



**Fig. b**

# SERVICE MODE

## 1. ENTERING TO SERVICE MODE

1) Press MUTE button twice on Remote Control.

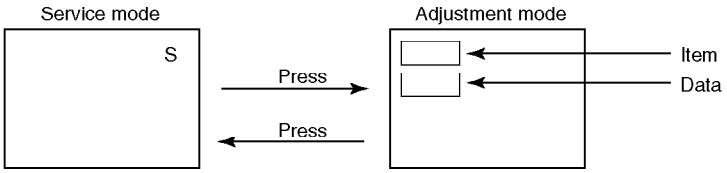
2) Press MUTE button again to keep pressing.

3) While pressing the MUTE button, press MENU button on TV set.

(Service mode display)

## 2. DISPLAYING THE ADJUSTMENT MENU

1) Press MENU button on TV.




## 3. KEY FUNCTION IN THE SERVICE MODE

The following key entry during display of adjustment menu provides special functions.

| | |
|---|---|
| Screen adjustment mode ON/OFF: | TV (ANT)/VIDEO button (on TV) |
| Selection of the adjustment items : | Channel ▲/▼ (on Remote) and ▲/▼ (on TV) |
| Change of the data value : | Volume ▲/▼ (on TV or Remote) |
| Adjustment menu mode ON/OFF : | MENU button (on TV) |
| Initialization of the memory (QA02) : | RECALL + ▲ button on TV |
| Initialization of the self diagnostic data: | RECALL + ▼ button on TV |

| | |
|---|---|
| "RCUT" selection : | 1 button |
| "GCUT" selection : | 2 button |
| "BCUT" selection : | 3 button |
| "SCNT" selection : | 4 button |
| "COLC" selection : | 5 button |
| Convergence adj : | 7 button |
| Self diagnostic display : | 9 button |

## 4. SELECTING THE ADJUSTING ITEMS

1) Every pressing of ▲ button in the service mode changes the adjustment items in the order of table-2. (▼ button for reverse order)

Refer to table-2 for preset data of adjustment mode.
(See SETTING & ADJUSTING DATA on page 20)

## 5. ADJUSTING THE DATA

1) Pressing of VOLUME ▲ or ▼ button will change the value of data in the range from 00H to FFH. The variable range depends on the adjusting item.

## 6. EXIT FROM SERVICE MODE

1) Pressing POWER button to turn off the TV once.

## ■ INITIALIZATION OF MEMORY DATA OF QA02

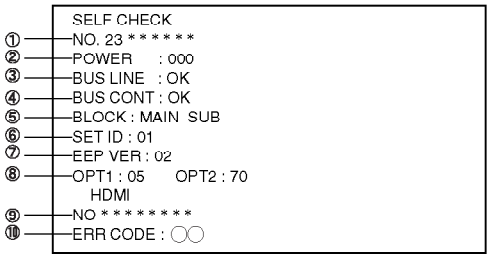
After replacing QA02, the following initialization is required.

1. Enter the service mode, then select any register item.
2. Press and hold the RECALL button on the Remote, then press the ▲button on the TV. The initialization of QA02 has been complated.

CAUTION: Never attempt to initialize the data unless QA02 has been replaced.

## 7. SELF DIAGNOSTIC FUNCTION

1) Press "9" button on Remote Control during display of adjustment menu in the service mode. The diagnosis will begin to check if interface among IC's are executed properly.
2) During diagnosis, the following displays are shown.


SELF CHECK
① NO. 23 * * * * * *
② POWER : 000
③ BUS LINE : OK
④ BUS CONT : OK
⑤ BLOCK : MAIN SUB
⑥ SET ID : 01
⑦ EEP VER : 02
⑧ OPT1 : 05 OPT2 : 70
HDMI
⑨ NO * * * * * * * *
⑩ ERR CODE : ○○

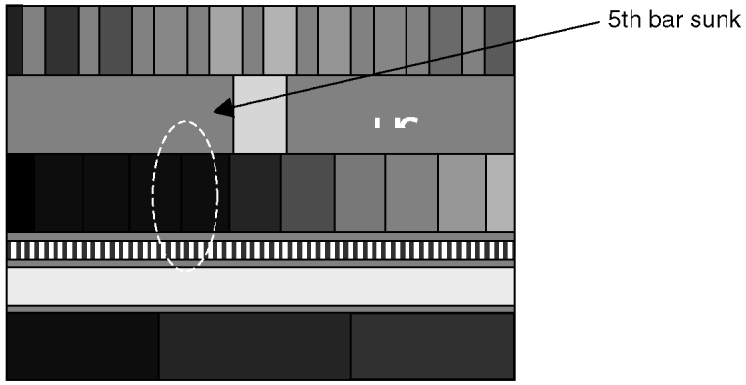
① Part number of microprocessor (QA01)
② Operation number of protection circuit (current limiter) . . . . "000" is normal.
③ BUS line check
- "OK" ..... Normal
- "SCL-GND" or "NG" ..... SCL-GND short circuit
- "SDA-GND" or "NG" ..... SDA-GND short circuit
- "SCL-SDA" or "NG" ..... SCL-SDA short circuit

④ BUS line ACK (acknowledge) check
- "OK" ..... Normal
- Display of Location Number . . . . NG
- (Display example)
- "QA02 NG", "Q501 NG" etc.
- Note: The indication of failure place is only one place though failure places are plural. When repair of a failure place finishes, the next failure place is indicated. (The order of priority of indication is left side.)

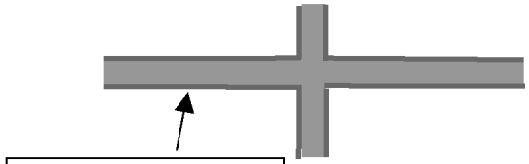
⑤ Sync. signal check
- Green display ..... Normal
- Red display ..... NG

MAIN ..... Main sync
SUB ..... Sub sync (when turn on the PIP)

⑥ ID code for TV Set
⑦ Version of "EEP"
⑧ Data for "OPT"
⑨ Part number of HDMI microprocessor
⑩ HDMI error code

| ADJUSTING ITEM | PROCESS INSTRUCTIONS | SIGNAL | ADJUSTMENT SPECIFICATION |
|---|---|---|---|
| SCREEN ADJUST | 1. Heat runnning the set at minimum 15minutes.<br>2. Go into screen adjustment mode.<br>Adjust Focus pack Screen VR of Red, Green, and Blue by looking directly into each CRT and adjusting each screen VR until CRT is just lit on left side of CRT. | | |
| WHITE BARANCE ADJUSTMENT | 1. Adjust white luster level to get 4.3cd/$m^2$ on dark area, and get 264.3cd/$m^2$ on bright area.<br>2. Using the data up and down keys, cycle through the adjustments for RED DRIVE, BLUE DRIVE, RED BIAS and BLUE BIAS.<br>Adjust RED DRIVE, BLUE DRIVE for bright area, and adjust RED BIAS and BLUE BIAS for dark area.<br>3. Continue to make adjustments color temperature to spec on each area. | White luster signal (Valuable input level) | 10500k+0UV<br>Same spec is applied on dark area and bright area. |
| SUB-BRIGHT ADJUSTMENT | 1. Receive Sub-Bright pattern on Video input.<br>2. Go into BRTC of service mode.<br>3. Press DATA UP/DOWN to adjust Sub-Bright level to spec.<br>  | Video input<br>SUB-BRIGHT SIGNAL<br>(Pedestal to white peak: 714mV ±30mV Value of low 10 steps:<br>200mV ±10mV) | 5TH±1<br>BAR SUNK |

FOCUS ADJUSTMENT (1/2)

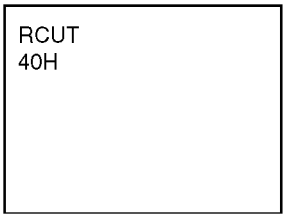
| ITEM | ADJUSTMENT METHOD |
|---|---|
| Focus Adjustment | (Condition)<br>• User Adjustment : SPORTS (CONTRAST MAX, BRIGHTNESS CENTER)<br>• Adjust after Centering Magnet adjusts.<br>• Signal : Lens Focus : R Dot cross (NTSC)<br>G Dot cross (NTSC)<br>B Dot cross (NTSC)<br>Electrical Focus : R Dot cross (NTSC)<br>G Dot cross (NTSC)<br>B Dot cross (NTSC)<br><br>(Adjustment)<br>1. Common Items<br>1) Rough Adjust the lens focus and electrical focus of each color(R, G, B).<br>2. Green Adjustment<br>1) Receive green single color by shielding jig.<br>2) Receive the Dot Cross pattern.<br>3) Adjust Green electrical focus.<br>Adjust Green electrical focus VR on focus pack (Z410) for best center focus.<br><br>If the focus blur on screen center and circumference, adjust the electrical focus is best point on all of screen.<br><br>4) Adjust Green lens focus.<br>Receive the Dot Cross pattern. Adjust Green lens for best center focus.<br><br>Green lens focus adjustment target<br>Dot-cross has red flare (red flare width :1mm)<br><br>  <br><br><br>5) Repeat (3)~(4),and adjust best focus point. |

FOCUS ADJUSTMENT (2/2)

| ITEM | ADJUSTMENT METHOD |
|---|---|
| Focus Adjustment | 3. Red Adjustment<br>1) Receive Red single color by shielding jig.<br>2) Receive the Dot Cross pattern.<br>3) Adjust Red electrical focus.<br>Adjust Red electrical focus VR on focus pack (Z410) for best center focus.<br>4) Adjust Red lens focus.<br>Receive the Dot Cross pattern. Adjust Red lens for best center focus.<br><br>5) Repeat (3)~(4),and adjust best focus point.<br><br>4. Blue Adjustment<br>1) Receive Blue single color by shielding jig.<br>2) Receive the Dot Cross pattern.<br>3) Adjust Blue electrical focus.<br>Adjust Blue electrical focus VR on focus pack (Z410) for best center focus.<br>(The Brightness is minimum point of Blue.)<br><br>4) Adjust Blue lens focus.<br>Receive the Dot Cross pattern. Adjust the Blue lens for best center focus.<br><br>After easy lens adjustment, turn to right side lens focus screw,<br>and so dot-cross has flare.<br>Next turn left focus screw, so flare disappears in Dot-Cross and Dot-Cross become blur.<br>This point is blue lens focus adjustment target. (flare disappear and become blur) |

# CONVERGENCE ADJUSTMENT

1. Receive NTSC signal.
2. Enter to the service mode. (See Page 10.)




3. Press "7" button to enter the convergence adjusting mode, and the internal net pattern will be displayed. Then, press "9" button to display veritcal stripes.
4. Select the point and the color by pressing following buttons. (Cursor should be blinking.)
   "2", "8", "4", "6" : To select point
   "3" : To select color
5. Then press "5" button, and adjust the convergence by pressing following buttons. (Cursor should not be blingking.)
   "2", "8", "4", "6" : To adjust convergence
   "3" : To select color
6. Repeat from steps 3 to 4 until the convergence and the geometry become fine. (See Page 14.)
7. Press "7" button to memorize the adjusted data.
8. Message of "PLEASE PUSH TOUCH FOCUS" will be displayed, and press TOUCH FOCUS button which is located on the front panel.
9. TOUCH FOCUS CALIBRATION will start.
10. Soon message of "CALIBRATION FINISHED" will be displayed, and then a normal picture will be displayed.
11. Then push TOUCH FOCUS button again, and confirm that the convergence does not change.

Note: If message of "TOUCH FOCUS ERROR" is displayed,
   1) Check the connection between four sensors and Convergence Unit.
   2) Check the geometry of internal net pattern. (See Page 14.)

   If any problem cannnot be found, hardware might have problem.

EXPLANATION OF KEY-FUNCTION IN THE CONVERGENCE ADJUSTMENT MODE

| | |
|---|---|
| Load BACK UP DATA: | 1 button |
| Up : | 2 button |
| Selet Green color: | 3 button |
| Left : | 4 button |
| Blinking of cursor ON/OFF: | 5 button |
| Right: | 6 button |
| Adjust mode ON/OFF: | 7 button |
| Down: | 8 button |
| Vertical stripe ON/OFF | 9 button |
| Erase Green line: | 0 button |
| Erase Red line: | 100 button |
| Erase Blue line: | ENT button |

Note: The following message will appear while pressing "1" button.
   ENTER: TO LOAD BACKUP DATA
   MUTE: TO LOAD INITIAL DATA
   EXIT: TO EXIT

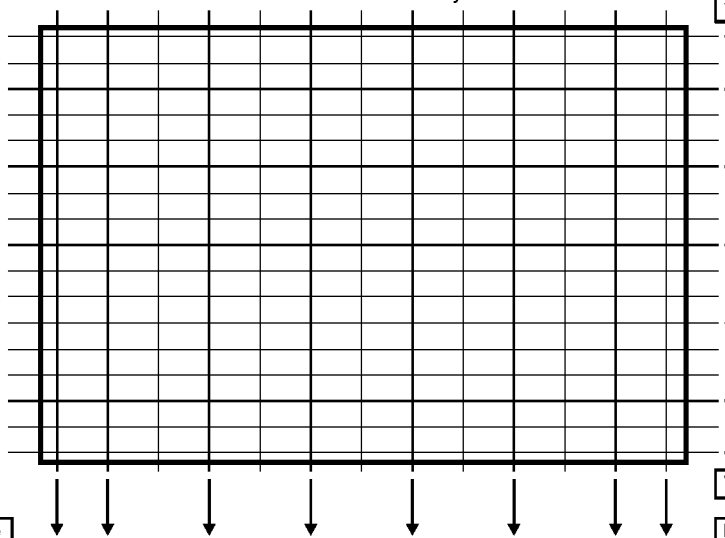
   BACKUP DATA sets in factory by performing CALIBRATION. BACKUP DATA updates by performing CALIBRATION again. INITIAL DATA uses the seed data on this model. Thus, it cannot updates. INITIAL DATA is not adjusted. Therefore, convergence data operates incorrectly. Normally, BACKUP DATA operates as base data on this model. If BACKUP DATA is incorrectly operated, INITIAL DATA is operated instead of BACKUP DATA.

DEFRECTION and CONVERGENCE

| ITEM | NAME | SETTING | INPUT SIGNAL | TEST POIN | MEASURING INSTRUMENT | ADJUSTMENT METHOD | ADJUSTMENT SPEC |
|---|---|---|---|---|---|---|---|
| VCEN | VERTICAL Raster centeing Adjustment | CONTRAST :MAX<br>BRIGHTNESS:CNT<br>COLOR :CNT<br>TINT :CNT | Retma Signal | Between TP-G to TP-V | Digital Volt Meter | Adjust the voltage between TP-G and TP-V. | 0±10 mV |
| DY Tilt Adjustment | | CONTRAST: MAX<br>BRIGHTNESS:CNT<br>COLOR :CNT<br>TINT :CNT<br>PIC SIZE :FULL | D-Cross Pattern | Picture Adjustment | Picture Adjustment | After roughly the green centering magnet alignment, adjust the green yoke so that the D-cross is as close as possible to the dummy screen cross. Adjust the Red and Blue in the same manner as Green. | The dummy screen cross and D-cross Gap ± 5mm. |
| Centering magnet Adjustment | | CONTRAST: MAX<br>BRIGHTNESS:CNT<br>COLOR :CNT<br>TINT :CNT<br>PIC SIZE :FULL | Retma Signal | Picture Adjustment | Picture Adjustment | Adjust the green center to the screen center with the centering magnet on Retma signal. And adjust the Red and Blue center to the green center each. | Color gap at the screen center is within ± 3mm. |
| WID | Horizontal Adjustment (FULL) | CONTRAST :MAX<br>BRIGHTNESS:CNT<br>COLOR :CNT<br>TINT :CNT<br>PIC SIZE : FULL<br>C-MUTE :ON | Retma Signal | Picture Adjustment | Picture Adjustment | Adjust the Horizontal width by WID on the green raster only.<br>After finishing Convergence adjustment, make sure that the width is the same as the spec. | 11 ± 1 bar<br>In case of C-MUTE OFF is the same spec as well. |
| HIT (VLIN) | Vertical Adjustment (FULL) | CONTRAST :MAX<br>BRIGHTNESS: CNT<br>COLOR :CNT<br>TINT :CNT<br>PIC SIZE : FULL<br>C-MUTE : ON | Retma Signal | Picture Adjustment | Picture Adjustment | Adjust the Vertical height by HIT(VLIN) on the green raster only.After finishing Convergence adjustment, make sure that the height is the same as the spec with C-MUTE OFF. | In case of Convergence mute.<br>Upper left...5 ± 0.5 bar<br>Bottom right...5 ± 0.5 bar<br>In case of C-MUTE OFF.<br>Upper left...4 ± 0.5 bar<br>Bottom right...4 ± 0.5bar. |
| Convergence | | | Retma Signal | Picture Adjustment | Picture Adjustment | Refer to the following (Convergence Net Geometry) | |

**CONVERGENCE (Adjust the voltage between TP-G and TP-V)**

Net Pattern Geometry



| Model | 51WIDE | 57WIDE | 65WIDE |
|---|---|---|---|
| V size | 635.085 | 708.750 | 810.00 |
| | 308.0 | 344.0 | 392.8 |
| | 231.0 | 258.0 | 294.6 |
| | 115.5 | 129.0 | 147.3 |
| | 0.0 | 0.0 | 0.0 |
| | 115.5 | 129.0 | 147.3 |
| | 231.0 | 258.0 | 294.6 |
| | 308.0 | 344.0 | 392.8 |
| V span | 38.5 | 43.0 | 49.1 |

| Model | H size | | | | | | | | | H span |
|---|---|---|---|---|---|---|---|---|---|---|
| 51WIDE | 1129.0 | 537.6 | 448.0 | 268.8 | 89.6 | 0.0 | 89.6 | 268.8 | 448.0 | 537.6 | 89.6 |
| 57WIDE | 1260.0 | 600.0 | 500.0 | 300.0 | 100.0 | 0.0 | 100.0 | 300.0 | 500.0 | 600.0 | 100.0 |
| 65WIDE | 1442.0 | 686.7 | 572.2 | 343.3 | 114.4 | 0.0 | 114.4 | 343.3 | 572.2 | 686.7 | 114.4 |

UNIT: mm

**NOTES**

In many cases, color misconvergence may be corrected by returning HIT and WID data in main deflection side to initial adjusting values. Following cases will surely require readjustment of convergence.

**CRT REPLACEMENT**

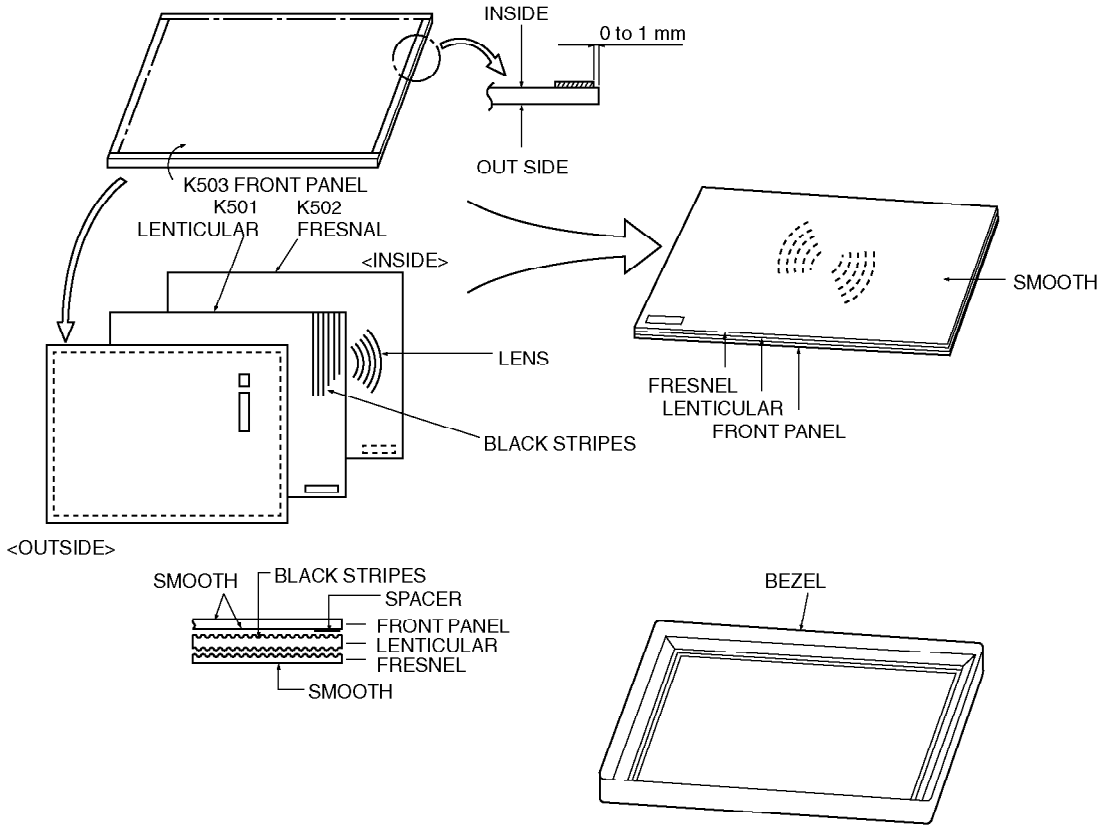
When CRT is replaced, main deflection readjustment and color matching are required.
Perform following procedures.

1. Replace two CRT's of blue and red.
2. Perform horizontal adjustment for blue and red yokes on base of green CRT data. Mount yoke and velocity mod. coil alignment, pushing towards CRT without gap.
3. Adjust alignment of blue and red. (Refer Alignment adjustment for details.)
4. Rotating centering magnet, adjust CRT centers of red and blue to CRT center of green.
   (Picture position adjustment)
5. Adjust HIT and WID data of main deflection, and decide data at the most precise screen comparing to green data.
6. Adjust convergence of screen picture for color matching. Do not move green one at this time.
7. After convergence adjustment of screen picture finishes, replace green CRT.
   For green CRT as well, repeat steps 2 to 5 above on bases of red and blue color matching to adjust convergence.
8. Execute TOUCH FOCUS following instructions displayed on the screen after finishing convergence adjustments of all the colors.
   Note: Press button "7" again after "PLEASE PUSH TOUCH FOCUS" has been displayed. Then, TOUCH FOCUS will not be executed, and the current state of convergence will be displayed.

# SCREEN AND MIRROR ALIGNMENTS

**ASSEMBLING OF FRONT SCREEN**

**MOUNTING OF FRONT SCREEN**




**CAUTION :** Do not hold the optical system parts (lens and mirror) with bare hand to avoid finger-prints on the surface of those parts.

**HOW TO CLEAN LENS AND MIRROR**

1. Be sure to remove sand dust with an air brush, etc.
2. When it is stained slightly, breathe upon it and wipe away with the specified cleaning cloth.
   For other stains than the above, wipe the stains away with the specified cloth into which a cleaning liquid has been soaked.

Cleaning liquid..... **LENS LUSTER** (Manufactured by Edmund Scientific Co.), etc.

**HOW TO CLEAN SCREEN**

When cleaning the screen, use a soft cloth so as not to damage the screen.

1. Wipe the screen with a dry cloth to remove moisture on the screen.

**Note :** Absolutely do not use detergent, water, alcohol, benzine, thinner, etc. for cleaning in order not to wipe away the black print on the surface.

# CIRCUIT CHECKS

## HIGH VOLTAGE CHECK

**CAUTION:** There is no HIGH VOLTAGE ADJUSTMENT on this chassis. Checking should be done following the steps below.

1. Connect an accurate high voltage meter to the anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST to minimum (zero beam current).
3. High voltage must be measured below (B) kV.
   Refer to table-1 for high voltage (B).
   (See SETTING & ADJUSTING DATA on page 20)
4. Vary the BRIGHTNESS to both extremes to be sure the high voltage does not exceed the limit under any conditions.

**CAUTION:**
When the following parts fail, check the High Voltage after replacing.

| Location No. | Name | Descriptions |
|---|---|---|
| | | 51", 57", 65" |
| T461Z | Flyback | TFB3094ZD |
| C440 | Capacitor | 1000pF, ±3% |
| C443 | Capacitor | 4700pF, ±3% |
| C444 | Capacitor | 3600pF, ±3% |
| C467 | Capacitor | 5600pF, ±5% |
| C468 | Capacitor | 6800pF, ±5% |

## ANODE VOLTAGE MEASURING METHOD

CAUTION: Take extra precaution when measuring this high voltage. High voltages are also present in surrounding circuit boards (CRT DRIVE assembly, DEFLECTION assembly, and POWER SUPPLY assembly).

1. Disconnect the FBT anode cable as outlined below. Measure high voltage at the point where the cable enters the FBT.
2. Holding the rubber cover firmly, turn it counterclockwise and check that the lock has been disengaged. (See Fig. b on page 9.)
3. Determine the extent of the rubber cover before disconnecting the cable.
4. Pull straight up the anode cable to disconnect.
5. When reconnecting the cable, proceed in the reverse order. After reconnecting, tug on the cable to check that it is secure.

## FS CIRCUIT CHECK

The Fail Safe (FS) circuit check is indispensable for the final check in servicing. Checking should be done following the steps below.

1. Turn the receiver on.
2. Temporarily short TP- (R) and TP- (X) on the DEF/POWER Board with a jumper wire.
   Raster and sound will disappear.
3. The receiver must remain in this state even after removing the jumper wire. This is the evidence that the FS circuit is functioning properly.
4. To obtain a picture again, temporarily turn the receiver off and allow the FS circuit more than 5 seconds to reset. Then turn the receiver on to produce a normal picture.

# SETTING & ADJUSTING DATA

## 【 SAFETY INSTRUCTIONS 】

| | | 51", 57", 65" |
|---|---|---|
| HIGH VOLTAGE AT ZERO BEAM: | (A) | 32.8 kV |
| MAX HIGH VOLTAGE: | (B) | 33.9 kV |

Table-1

## 【 SERVICE MODE 】

**ADJUSTING ITEMS AND DATA IN THE SERVICE MODE:**

| Item | Name of adjustment | Preset | Data |
|---|---|---|---|
| RCUT | R CUT OFF | 80H | ← |
| BCUT | B CUT OFF | 80H | ← |
| RDRV | R DRIVE | 40H | ← |
| BDRV | B DRIVE | 40H | ← |
| BRTC | BRIGHT CENTER | 80H | ← |
| HIT | PICTURE HIT | 30H | ← |
| LIN | V LINEARITY | 12H | ← |
| VSC | V S CORRECTION | 29H | ← |
| WID | PICTURE WIDTH | 48H | ← |

| Item | Name of adjustment | Preset | Data |
|---|---|---|---|
| COLC | COLOR CENTER | 5DH | ← |
| VCP | V COMPENSATION | 06H | ← |
| PARA | EW PARABOLA | 0FH | ← |
| CNR | EW M CORRECTION | 10H | ← |
| HCP | H COMPENSATION | 00H | ← |
| VFC | V f CORRECTION | 00H | ← |
| VCEN | V CENTERRING | 7AH | ← |
| TVOP | TV OPTION | 40H | ← |

**Table-2**

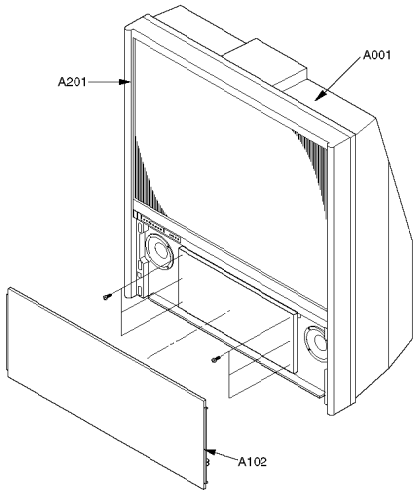
## 【 CIRCUIT CHECKS 】

| | | |
|---|---|---|
| HIGH VOLTAGE DET | Q306 #⑧pin GND | 9.0 V |

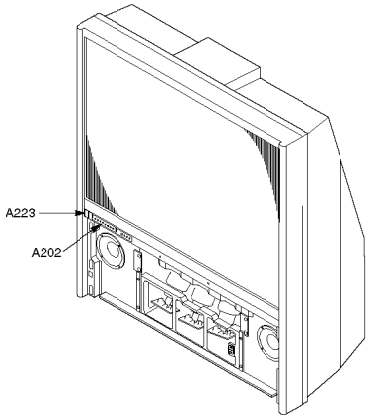
**Table-3**

# MECHANICAL DISASSEMBLY

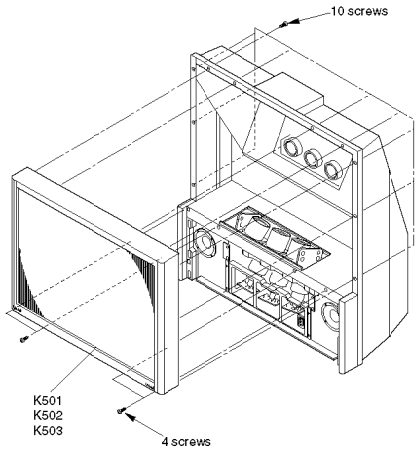
**1 Speaker Grille Removal**



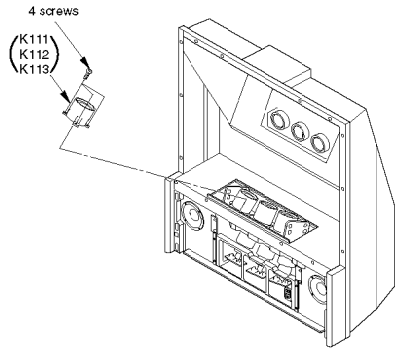

**2 Control Panel Removal**



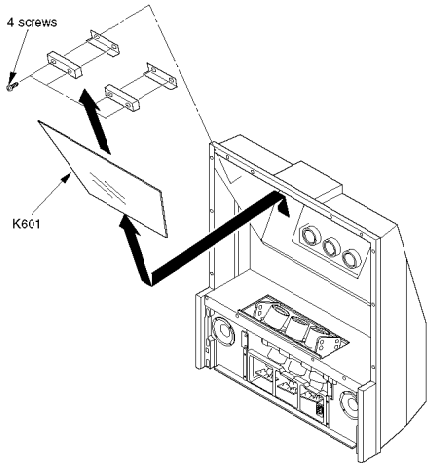

**3 Front Mask Removal**



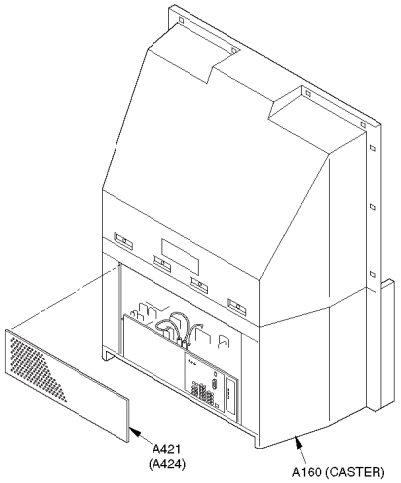

**4 Shield Plate, Lens Removal**




**5 Mirror Removal**




**6 Back Board Removal**



# CHASSIS AND CABINET REPLACEMENT PARTS LIST

**WARNING**: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 3 OF THIS MANUAL.

**CAUTION**: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE. Do not degrade the safety of the receiver through improper servicing.

***NOTICE:***

The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.

The PC board assembly with * mark is no longer available after the end of the production.

**Model : 51HC85/57HC85/65HC15/65HC85**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Capacitors ..... | CD | : Ceramic Disk | PF | : Plastic Film | EL | : Electrolytic |
| Resistors ..... | CF | : Carbon Film | CC | : Carbon Composition | MF | : Metal Film |
| | OMF | : Oxide Metal Film | VR | : Variable Resistor | FR | : Fusible Resistor |

(All CD and PF capacitors are ±5%, 50V and all resistors, ±5%, 1/6W unless otherwise noted.)

| Location No. | Parts No. | Description |
|---|---|---|
| **#1 : [51HC85]** | | |
| **#2 : [57HC85]** | | |
| **#3 : [65HC15]** | | |
| **#4 : [65HC85]** | | |
| **CAPACITORS** | | |
| C108 | 76665221 | ELECTROLYTIC, 10V 220UF M 3A |
| C109 | 76100104 | CERAMIC CHIP, 25V F 0.1UF Z |
| C110 | 76794101 | ELECTROLYTIC, 16V 100UF M |
| C221 | 76503041 | PLASTIC FILM , 63V 0.1UF J |
| C301 | 76503053 | PLASTIC FILM, 63V 1UF J |
| C302 | 76669010 | ELECTROLYTIC, 50V 1UF M 3A |
| C303 | 76503053 | PLASTIC FILM, 63V 1UF J |
| C308 | 76567223 | PLASTIC FILM, 50V 0.022UF J |
| C309 | 76109102 | CERAMIC CHIP, 50V B 1000PF K |
| C310 | 76073053 | ELECTROLYTIC, 25V 100UF M 3A |
| C311 | 76109103 | CERAMIC CHIP, 50V B 0.01UF K |
| C312 | 76109332 | CERAMIC CHIP, 50V B 3300PF K |
| C314 | 76503037 | PLASTIC FILM, 63V 0.047UF J |
| C315 | 76073020 | ELECTROLYTIC, 10V 1000UF M 3A |
| C320 | 76669101 | ELECTROLYTIC, 50V 100UF M |
| C321 | 76669101 | ELECTROLYTIC, 50V 100UF M |
| C323 | 76109473 | CERAMIC CHIP, 25V B 0.047UF K |
| C324 | 76503053 | PLASTIC FILM, 63V 1UF J |
| C325 | 76082057 | PLASTIC FILM, 100V 0.22UF J |
| C327 | 76092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C328 | 76082256 | PLASTIC FILM, 100V 2200PF J |
| C330 | 76073034 | ELECTROLYTIC, 16V 10UF M 3A |
| C332 | 76669101 | ELECTROLYTIC, 50V 100UF M |
| C333 | 76082272 | PLASTIC FILM, 100V 0.047UF J |
| C334 | 76109471 | CERAMIC CHIP, 50V B 470PF K |
| C338 | 76666100 | ELECTROLYTIC, 16V 10UF M 3A |
| C340 | 76073037 | ELECTROLYTIC, 16V 47UF M 3A |
| C361 | 76092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C362 | 76109473 | CERAMIC CHIP, 25V B 0.047UF K |
| C370 | 76669229 | ELECTROLYTIC, 50V 2.2UF M 3A |
| C371 | 76092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C401 | 76214332 | CERAMIC DISC, 500V B 3300PF K |
| C402 | 76214391 | CERAMIC DISC, 500V B 390PF K |
| C405 | 76503041 | PLASTIC FILM , 63V 0.1UF J |
| C412 | 76828124 | PLASTIC FILM, 200V 0.12UF J |
| C415 | 76092484 | CERAMIC DISC, 2KV B 1500PF K |
| C416 | 76676220 | ELECTROLYTIC, 100V 22UF M 3A |
| C417 | 76503334 | PLASTIC FILM, 250V 1.5UF J |
| C419 | 76105331 | CERAMIC CHIP, 50V CH 330PF J |
| C420 | 76503041 | PLASTIC FILM , 63V 0.1UF J |

| Location No. | Parts No. | Description |
|---|---|---|
| C422 | 76109102 | CERAMIC CHIP, 50V B 1000PF K |
| ⚠ C423 | 76503252 | PLASTIC FILM, 400V 0.3UF J |
| ⚠ C425 | 76503142 | PLASTIC FILM, 400V 0.27UF J |
| C426 | 76211222 | CERAMIC DISC, 2KV B 2200PFK |
| C432 | 76567333 | PLASTIC FILM, 50V 0.033UF J |
| ⚠ C440 | 76503059 | PLASTIC FILM, 1800VH 1000PF H |
| ⚠ C443 | 76503099 | PLASTIC FILM, 1800VH 4700PF H |
| ⚠ C444 | 76503347 | PLASTIC FILM, 1800VH 3600PF H |
| C445 | 76828473 | PLASTIC FILM, 200V 0.047UF J |
| C446 | 76073120 | ELECTROLYTIC, 250V 33UF |
| C448 | 76073118 | ELECTROLYTIC, 160V 33UF M |
| C449 | 76214221 | CERAMIC DISC, 500V B 220PF K |
| C450 | 76073057 | ELECTROLYTIC, 25V 1000UF M 3A |
| C460 | 76678220 | ELECTROLYTIC, 200V 22UF M |
| C463 | 76109682 | CERAMIC CHIP, 50V B 6800PF K |
| C464 | 76503149 | PLASTIC FILM, 250V 3.3UF |
| ⚠ C467 | 76820562 | PLASTIC FILM, 630V 5600PF J |
| ⚠ C468 | 76820682 | PLASTIC FILM, 630V 6800PF J |
| C473 | 76092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C481 | 76092784 | CERAMIC CHIP, 10V B 0.33UF K |
| C482 | 76109822 | CERAMIC CHIP, 50V B 8200PF K |
| C483 | 76105470 | CERAMIC CHIP, 50V CH 47PF J |
| C490 | 76073037 | ELECTROLYTIC, 16V 47UF M 3A |
| C491 | 76666100 | ELECTROLYTIC, 16V 10UF M 3A |
| C496 | 76503049 | PLASTIC FILM, 63V 0.47UF J |
| C497 | 76085022 | ELECTROLYTIC, NP, 16V 100UF M 3A |
| C499 | 76666220 | ELECTROLYTIC, 16V 22UF M 3A |
| C601 | 76109681 | CERAMIC CHIP, 50V B 680PF K |
| C602 | 76109681 | CERAMIC CHIP, 50V B 680PF K |
| C603 | 76073084 | ELECTROLYTIC, 50V 4.7UF M 3A |
| C604 | 76073084 | ELECTROLYTIC, 50V 4.7UF M 3A |
| C605 | 76073084 | ELECTROLYTIC, 50V 4.7UF M 3A |
| C606 | 76073084 | ELECTROLYTIC, 50V 4.7UF M 3A |
| C607 | 76073053 | ELECTROLYTIC, 25V 100UF M 3A |
| C608 | 76073086 | ELECTROLYTIC, 50V 10UF M 3A |
| C612 | 76073039 | ELECTROLYTIC, 16V 220UF M 3A |
| C661 | 76073084 | ELECTROLYTIC, 50V 4.7UF M 3A |
| C662 | 76073086 | ELECTROLYTIC, 50V 10UF M 3A |
| C663 | 76073086 | ELECTROLYTIC, 50V 10UF M 3A |
| C665 | 76109103 | CERAMIC CHIP, 50V B 0.01UF K |
| C666 | 76073084 | ELECTROLYTIC, 50V 4.7UF M 3A |
| C667 | 76794100 | ELECTROLYTIC, 16V 10UF M |
| C680 | 76073073 | ELECTROLYTIC, 35V 2200UF M 3A |
| C681 | 76109103 | CERAMIC CHIP, 50V B 0.01UF K |
| C682 | 76073082 | ELECTROLYTIC, 50V 2.2UF M 3A |
| C683 | 76795101 | ELECTROLYTIC, 25V 100UF M |

| Location No. | Parts No. | Description |
|---|---|---|
| C684 | 76795470 | ELECTROLYTIC, 25V 47UF M |
| C698 | 76085055 | CHEMICON NP 25V 222 25V 2200UF M |
| C699 | 76085055 | CHEMICON NP 25V 222 25V 2200UF M |
| ⚠ C801 | 76503004 | PLASTIC FILM, AC275V 0.47UF M |
| C805 | 76092281 | CERAMIC DISC, AC250V E 4700PF |
| C809 | 76086067 | CHEMICON 200V 102M LGQ2D102MESHTL |
| C810 | 76086067 | CHEMICON 200V 102M LGQ2D102MESHTL |
| ⚠ C811 | 76092595 | CERAMIC DISC, AC250V E 2200PF M |
| ⚠ C812 | 76092595 | CERAMIC DISC, AC250V E 2200PF M |
| ⚠ C814 | 76092579 | CERAMIC DISC, AC250V B 470PF K |
| C840 | 76679220 | ELECTROLYTIC, 250V 22UF M 3A |
| C841 | 76073097 | ELECTROLYTIC, 10V 2200UF M 3A |
| C842 | 76503041 | PLASTIC FILM , 63V 0.1UF J |
| C843 | 76092333 | CERAMIC DISC, 2KV 100PF K |
| C845 | 76669229 | ELECTROLYTIC, 50V 2.2UF M 3A |
| C849 | 76073038 | ELECTROLYTIC, 16V 100UF M 3A |
| C850 | 76073187 | ELECTROLYTIC, 35V 560UF M 3A |
| C851 | 76073187 | ELECTROLYTIC, 35V 560UF M 3A |
| C852 | 76073169 | ELECTROLYTIC, 25V 470UF M 3A |
| C853 | 76073169 | ELECTROLYTIC, 25V 470UF M 3A |
| C854 | 76667470 | ELECTROLYTIC, 25V 47UF M 3A |
| C860 | 76214103 | CERAMIC DISC, 500V B 0.01UF K |
| C862 | 76092341 | CERAMIC DISC, 2KV R 470PF K |
| C863 | 76503045 | PLASTIC FILM, 63V 0.22UF J |
| C866 | 76503053 | PLASTIC FILM, 63V 1UF J |
| C867 | 76591472 | PLASTIC FILM, 50V 4700PF J |
| C868 | 76669470 | ELECTROLYTIC, 50V 47UF M 3A |
| C869 | 76678229 | ELECTROLYTIC, 200V 2.2UF M 3A |
| C870 | 76503565 | PLASTIC FILM, 800V 0.1UF H |
| C871 | 76092343 | CERAMIC DISC, 2KV 680PF K |
| C873 | 76503045 | PLASTIC FILM, 63V 0.22UF J |
| C874 | 76092337 | CERAMIC DISC, 2KV 220PF K |
| C876 | 76503049 | PLASTIC FILM, 63V 0.47UF J |
| C877 | 76092344 | CERAMIC DISC, 2KV 820PF K |
| C879 | 76214102 | CERAMIC DISC, 500V B 1000PF K |
| C880 | 76092339 | CERAMIC DISC, 2KV 330PF K |
| C881 | 76092339 | CERAMIC DISC, 2KV 330PF K |
| C884 | 76086916 | ELECTROLYTIC, 160V 330UF M 3D |
| C885 | 76668102 | ELECTROLYTIC, 35V 1000UF M 3A |
| C888 | 76503045 | PLASTIC FILM, 63V 0.22UF J |
| C891 | 76073155 | ELECTROLYTIC, 16V 1000UF M 3A |
| C892 | 76073155 | ELECTROLYTIC, 16V 1000UF M 3A |
| C893 | 76073141 | ELECTROLYTIC, 10V 1000UF M 3A |
| C898 | 76092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C901 | 76211102 | CERAMIC DISC, 2KV B 1000PF K |
| C902 | 76794101 | ELECTROLYTIC, 16V 100UF M |
| C903 | 76232103 | CERAMIC DISC, 50V F 0.01UF Z |
| C904 | 76109471 | CERAMIC CHIP, 50V B 470PF K |
| C906 | 76679220 | ELECTROLYTIC, 250V 22UF M 3A |
| C907 | 76214101 | CERAMIC DISC, 500V B 100PF K |
| C911 | 76211102 | CERAMIC DISC, 2KV B 1000PF K |
| C912 | 76794101 | ELECTROLYTIC, 16V 100UF M |
| C913 | 76232103 | CERAMIC DISC, 50V F 0.01UF Z |
| C914 | 76109471 | CERAMIC CHIP, 50V B 470PF K |
| C915 | 76679220 | ELECTROLYTIC, 250V 22UF M 3A |
| C917 | 76214101 | CERAMIC DISC, 500V B 100PF K |
| C921 | 76211102 | CERAMIC DISC, 2KV B 1000PF K |
| C922 | 76794101 | ELECTROLYTIC, 16V 100UF M |
| C923 | 76109471 | CERAMIC CHIP, 50V B 470PF K |
| C924 | 76232103 | CERAMIC DISC, 50V F 0.01UF Z |
| C925 | 76679220 | ELECTROLYTIC, 250V 22UF M 3A |
| C926 | 76214101 | CERAMIC DISC, 500V B 100PF K |
| C934 | 76092731 | CERAMIC CHIP, 16V B 1UF K |
| C944 | 76092542 | CERAMIC CHIP, 16V B 1UF K |
| C954 | 76092731 | CERAMIC CHIP, 16V B 1UF K |
| C961 | 76763101 | ELECTROLYTIC, 16V 100UF M |
| C962 | 76203100 | ELECTORLYTIC, 16V 10UF M 7L 3A |
| C4430 | 76073034 | ELECTROLYTIC, 16V 10UF M 3A |
| C7101 | 76797470 | ELECTROLYTIC, 50V 47UF M |
| C7102 | 76109103 | CERAMIC CHIP, 50V B 0.01UF K |
| C7103 | 76206479 | ELECTROLYTIC, 50V 4.7UF M 7L 3A |
| C7104 | 76108330 | CERAMIC CHIP, 50V SL 33PF J |
| C7105 | 76092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C7106 | 76797470 | ELECTROLYTIC, 50V 47UF M |
| C7107 | 76790470 | ELECTROLYTIC, 160V 47UF M |
| C7108 | 76214472 | CERAMIC DISC, 500V B 4700PF K |

| Location No. | Parts No. | Description |
|---|---|---|
| C7109 | 76214472 | CERAMIC DISC, 500V B 4700PF K |
| C7110 | 76666470 | ELECTORLYTIC, 16V 47UF M 3A |
| C7111 | 76666470 | ELECTORLYTIC, 16V 47UF M 3A |
| C7112 | 76435560 | CERAMIC DISC, 500V SL 56PF J |
| C7113 | 76790100 | ELECTROLYTIC, 160V 10UF M |
| C7114 | 76092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C7701 | 76503047 | PLASTIC FILM, 63V 0.33UF J |
| C7704 | 76073053 | ELECTROLYTIC, 25V 100UF M 3A |
| C7705 | 76073037 | ELECTROLYTIC, 16V 47UF M 3A |
| C7706 | 76503047 | PLASTIC FILM, 63V 0.33UF J |
| C7722 | 76105331 | CERAMIC CHIP, 50V CH 330PF J |
| C7724 | 76073091 | ELECTROLYTIC, 50V 220UF M 3A |
| C7725 | 76073091 | ELECTROLYTIC, 50V 220UF M 3A |
| C7727 | 76105331 | CERAMIC CHIP, 50V CH 330PF J |
| C7730 | 76105331 | CERAMIC CHIP, 50V CH 330PF J |
| C7733 | 76105331 | CERAMIC CHIP, 50V CH 330PF J |
| C7735 | 76073091 | ELECTROLYTIC, 50V 220UF M 3A |
| C7736 | 76073091 | ELECTROLYTIC, 50V 220UF M 3A |
| C7738 | 76105331 | CERAMIC CHIP, 50V CH 330PF J |
| C7741 | 76105331 | CERAMIC CHIP, 50V CH 330PF J |
| C7750 | 76073015 | ELECTROLYTIC, 10V 47UF M 3A |
| C7751 | 76073089 | ELECTROLYTIC, 50V 47UF M 3A |
| C7752 | 76073089 | ELECTROLYTIC, 50V 47UF M 3A |
| C7753 | 76073093 | ELECTROLYTIC, 50V 470UF M 3A |
| C7761 | 76073015 | ELECTROLYTIC, 10V 47UF M 3A |
| C7762 | 76073015 | ELECTROLYTIC, 10V 47UF M 3A |
| C7765 | 76667220 | ELECTROLYTIC, 25V 22UF M 3A |
| C7784 | 76667220 | ELECTROLYTIC, 25V 22UF M 3A |
| C7785 | 76092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C7786 | 76092730 | CERAMIC CHIP, 16V B 0.1UF K |
| C7800 | 76666220 | ELECTROLYTIC, 16V 22UF M 3A |
| CB01 | 24794470 | ELECTROLYTIC, 16V 47UF M |
| CB51 | 24590103 | PLASTIC FILM, 50V 0.01UF J |
| CB52 | 24794470 | ELECTROLYTIC, 16V 47UF M |
| CB53 | 24503041 | PLASTIC FILM , 63V 0.1UF J |
| CB54 | 24436221 | CERAMIC DISC, 50V SL 220PF J |
| CB55 | 24797010 | ELECTROLYTIC, 50V 1UF M |
| CB56 | 24794470 | ELECTROLYTIC, 16V 47UF M |
| CB58 | 24794470 | ELECTROLYTIC, 16V 47UF M |
| CB59 | 24590103 | PLASTIC FILM, 50V 0.01UF J |
| CB60 | 24794100 | ELECTROLYTIC, 16V 10UF M |
| CB61 | 24503041 | PLASTIC FILM , 63V 0.1UF J |
| CB504 | 76794100 | ELECTROLYTIC, 16V 10UF M |
| CB505 | 76590104 | CERAMIC DISC, 50V 0.1UF J |
| CV14 | 76212102 | CERAMIC DISC, 50V B 1000PF K |
| CV27 | 76762471 | ELECTROLYTIC, 10V 470UF M |
| CV29 | 76763101 | ELECTROLYTIC, 16V 100UF M |
| CV30 | 76232103 | CERAMIC DISC, 50V F 0.01UF Z |
| CV38 | 76212102 | CERAMIC DISC, 50V B 1000PF K |
| CV39 | 76212102 | CERAMIC DISC, 50V B 1000PF K |
| ⚠ Z450 | 76083014 | CR-BLOCK, TPA5011AH |

**RESISTORS**

| | | |
|---|---|---|
| R240 | 76367153 | CARBON FILM, 1/6W 15K OHM G |
| R241 | 76367183 | CARBON FILM, 1/6W 18K OHM G |
| R242 | 76367183 | CARBON FILM, 1/6W 18K OHM G |
| R243 | 76367273 | CARBON FILM, 1/6W 27K OHM G |
| R244 | 76366124 | CARBON FILM, 1/6W 120K OHM J |
| R245 | 76366472 | CARBON FILM, 1/6W 4.7K OHM J |
| R246 | 76366472 | CARBON FILM, 1/6W 4.7K OHM J |
| R247 | 76366102 | CARBON FILM, 1/6W 1K OHM J |
| R249 | 76366104 | CARBON FILM, 1/6W 100K OHM J |
| R264 | 76366750 | CARBON FILM, 1/6W 75 OHM J |
| R265 | 76366750 | CARBON FILM, 1/6W 75 OHM J |
| R266 | 76366750 | CARBON FILM, 1/6W 75 OHM J |
| R286 | 76366750 | CARBON FILM, 1/6W 75 OHM J |
| R287 | 76366750 | CARBON FILM, 1/6W 75 OHM J |
| R288 | 76366750 | CARBON FILM, 1/6W 75 OHM J |
| R302 | 76366101 | CARBON FILM, 1/6W 100 OHM J |
| R305 | 76322109 | OXIDE METAL FILM, 1W 1 OHM J |
| R306 | 76011822 | CHIP, 1/20W 8.2K OHM J |
| R307 | 76011101 | CHIP, 1/20W 100 OHM J |
| R308 | 76011101 | CHIP, 1/20W 100 OHM J |
| R311 | 76366563 | CARBON FILM, 1/6W 56K OHM J |
| R312 | 76011123 | CHIP, 1/20W 12K OHM J |
| R313 | 76011102 | CHIP, 1/20W 1K OHM J |

| Location No. | Parts No. | Description |
|---|---|---|
| R314 | 76011473 | CHIP, 1/20W 47K OHM J |
| R315 | 76011681 | CHIP, 1/20W 680 OHM J |
| R321 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R322 | 76011101 | CHIP, 1/20W 100 OHM J |
| R325 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R330 | 76000633 | METAL FILM, 1/4W 10K OHM F |
| R331 | 76000633 | METAL FILM, 1/4W 10K OHM F |
| R334 | 76011102 | CHIP, 1/20W 1K OHM J |
| R335 | 76011102 | CHIP, 1/20W 1K OHM J |
| R336 | 76011102 | CHIP, 1/20W 1K OHM J |
| R337 | 76321129 | OXIDE METAL FILM, 1/2W 1.2 OHM J |
| R338 | 76011153 | CHIP, 1/2OW 15K OHM J |
| R340 | 76366103 | CARBON FILM, 1/6W 10K OHM J |
| R341 | 76011183 | CHIP, 1/20W 18K OHM J |
| R343 | 76011102 | CHIP, 1/20W 1K OHM J |
| R344 | 76382151 | OXIDE METAL FILM, 1W 150 OHM J |
| R345 | 76000445 | CHIP JUMPER, 1608TYPE |
| R346 | 76382391 | OXIDE METAL FILM, 1W 390 OHM J |
| R348 | 76011473 | CHIP, 1/20W 47K OHM J |
| R349 | 76011392 | CHIP, 1/20W 3.9K OHM J |
| R350 | 76011123 | CHIP, 1/20W 12K OHM J |
| R355 | 76366103 | CARBON FILM, 1/6W 10K OHM J |
| R360 | 76011562 | CHIP, 1/20W 5.6K OHM J |
| R361 | 76011104 | CHIP, 1/20W 100K OHM J |
| R362 | 76011473 | CHIP, 1/20W 47K OHM J |
| R363 | 76011103 | CHIP, 1/20W 10K OHM J |
| R364 | 76011331 | CHIP, 1/20W 330 OHM J |
| R365 | 76011682 | CHIP, 1/20W 6.8K OHM J |
| R366 | 76366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R367 | 76011392 | CHIP, 1/20W 3.9K OHM J |
| R369 | 76366103 | CARBON FILM, 1/6W 10K OHM J |
| R370 | 76366102 | CARBON FILM, 1/6W 1K OHM J |
| R371 | 76011823 | CHIP, 1/20W 82K OHM J |
| R372 | 76011332 | CHIP, 1/20W 3.3K OHM J |
| R373 | 76011823 | CHIP, 1/20W 82K OHM J |
| R374 | 76011104 | CHIP, 1/20W 100K OHM J |
| R375 | 76011153 | CHIP, 1/2OW 15K OHM J |
| R376 | 76011333 | CHIP, 1/20W 33K OHM J |
| R378 | 76011103 | CHIP, 1/20W 10K OHM J |
| R390 | 76382561 | OXIDE METAL FILM, 1W 560 OHM J |
| R391 | 76382561 | OXIDE METAL FILM, 1W 560 OHM J |
| R392 | 76382561 | OXIDE METAL FILM, 1W 560 OHM J |
| R403 | 76553101 | OXIDE METAL FILM, 1W 100 OHM J |
| R404 | 76011182 | CHIP, 1/20W 1.8K OHM J |
| R405 | 76366101 | CARBON FILM, 1/6W 100 OHM J |
| R406 | 76382682 | OXIDE METAL FILM, 1W 6.8K OHM J |
| R407 | 76381100 | OXIDE METAL FILM, 1/2W 10 OHM J |
| R409 | 76555220 | OXIDE METAL FILM, 3W 22 OHM J |
| R410 | 76555220 | OXIDE METAL FILM, 3W 22 OHM J |
| R411 | 76323229 | OXIDE METAL FILM, 2W 2.2 OHM J |
| R412 | 76383153 | OXIDE METAL FILM, 2W 15K OHM J |
| R413 | 76366101 | CARBON FILM, 1/6W 100 OHM J |
| R414 | 76019259 | FUSIBLE, 1/4W 27 OHM G |
| R415 | 76011102 | CHIP, 1/20W 1K OHM J |
| R416 | 76383151 | OXIDE METAL FILM, 2W 150 OHM J |
| R417 | 76366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R418 | 76011103 | CHIP, 1/20W 10K OHM J |
| R419 | 76011103 | CHIP, 1/20W 10K OHM J |
| R420 | 76366103 | CARBON FILM, 1/6W 10K OHM J |
| R421 | 76366223 | CARBON FILM, 1/6W 22K OHM J |
| R422 | 76011223 | CHIP, 1/20W 22K OHM J |
| R423 | 76942102 | CARBON COMPOSITION, 1/2W 1K OHM J |
| R424 | 76376104 | CARBON FILM, 1/2W 100K OHM J |
| R425 | 76376104 | CARBON FILM, 1/2W 100K OHM J |
| R426 | 76366101 | CARBON FILM, 1/6W 100 OHM J |
| R427 | 76011101 | CHIP, 1/20W 100 OHM J |
| R428 | 76377224 | CARBON FILM, 1W 220K OHM J |
| R429 | 76942102 | CARBON COMPOSITION, 1/2W 1K OHM J |
| R431 | 76383102 | OXIDE METAL FILM, 2W 1K OHM J |
| R432 | 76376274 | CARBON FILM, 1/2W 270K OHM J |
| R433 | 76376274 | CARBON FILM, 1/2W 270K OHM J |
| R434 | 76376274 | CARBON FILM, 1/2W 270K OHM J |
| R435 | 76366332 | CARBON FILM, 1/6W 3.3K OHM J |
| R436 | 76366473 | CARBON FILM, 1/6W 47K OHM J |
| R437 | 76011223 | CHIP, 1/20W 22K OHM J |
| R438 | 76011102 | CHIP, 1/20W 1K OHM J |

| Location No. | Parts No. | Description |
|---|---|---|
| R439 | 76011103 | CHIP, 1/20W 10K OHM J |
| R440 | 76011103 | CHIP, 1/20W 10K OHM J |
| R441 | 76533331 | FUSIBLE, 2W 330 OHM J |
| R443 | 76310109 | OXIDE METAL FILM, 1/2W 1 OHM J |
| R444 | 76322398 | OXIDE METAL FILM, 1W 0.39 OHM J |
| R446 | 76011103 | CHIP, 1/20W 10K OHM J |
| R447 | 76382473 | OXIDE METAL FILM, 1W 47K OHM J |
| R448 | 76366562 | CARBON FILM, 1/6W 5.6K OHM J |
| R449 | 76366152 | CARBON FILM, 1/6W 1.5K OHM J |
| R466 | 76366433 | CARBON FILM, 1/6W 43K OHM J |
| R467 | 76011221 | CHIP, 1/20W 220 OHM J |
| R469 | 76011101 | CHIP, 1/20W 100 OHM J |
| R470 | 76322478 | OXIDE METAL FILM, 1W 0.47 OHM J |
| R471 | 76366224 | CARBON FILM, 1/6W 220K OHM J |
| R472 | 76011101 | CHIP, 1/20W 100 OHM J |
| R473 | 76011223 | CHIP, 1/20W 22K OHM J |
| R474 | 76376393 | CARBON FILM, 1/2W 39K OHM J |
| R475 | 76366101 | CARBON FILM, 1/6W 100 OHM J |
| R476 | 76011471 | CHIP, 1/20W 470 OHM J |
| ⚠ R477 | 76998331 | CHIP, 1/16W 330 OHM D |
| R478 | 76011102 | CHIP, 1/20W 1K OHM J |
| R480 | 76011473 | CHIP, 1/20W 47K OHM J |
| R481 | 76366103 | CARBON FILM, 1/6W 10K OHM J |
| R482 | 76011103 | CHIP, 1/20W 10K OHM J |
| R483 | 76000445 | CHIP JUMPER, 1608TYPE |
| R485 | 76011681 | CHIP, 1/20W 680 OHM J |
| R486 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R487 | 76552271 | OXIDE METAL FILM, 1/2W 270 OHM J |
| R488 | 76552151 | OXIDE METAL FILM, 1/2W 150 OHM J |
| R489 | 76011102 | CHIP, 1/20W 1K OHM J |
| R490 | 76552331 | OXIDE METAL FILM, 1/2W 330 OHM J |
| R491 | 76011222 | CHIP, 1/20W 2.2K OHM J |
| ⚠ R492 | 76998102 | CHIP, 1/16W 1K OHM |
| ⚠ R493 | 76998391 | CHIP, 1/16W 390 OHM |
| ⚠ R494 | 76998471 | CHIP, 1/16W 470 OHM |
| R495 | 76011333 | CHIP, 1/20W 33K OHM J |
| R496 | 76011103 | CHIP, 1/20W 10K OHM J |
| R497 | 76011100 | CHIP, 1/20W 10 OHM J |
| R498 | 76011103 | CHIP, 1/20W 10K OHM J |
| R499 | 76011102 | CHIP, 1/20W 1K OHM J |
| R513 | 76366101 | CARBON FILM, 1/6W 100 OHM J |
| R515 | 76366103 | CARBON FILM, 1/6W 10K OHM J |
| R601 | 76011822 | CHIP, 1/20W 8.2K OHM J |
| R602 | 76011822 | CHIP, 1/20W 8.2K OHM J |
| R603 | 76011102 | CHIP, 1/20W 1K OHM J |
| R604 | 76011102 | CHIP, 1/20W 1K OHM J |
| R609 | 76011563 | CHIP, 1/20W 56K OHM J |
| R610 | 76011273 | CHIP, 1/20W 27K OHM J |
| R611 | 76011103 | CHIP, 1/20W 10K OHM J |
| R612 | 76011222 | CHIP, 1/20W 2.2K OHM J |
| R613 | 76011223 | CHIP, 1/20W 22K OHM J |
| R614 | 76011103 | CHIP, 1/20W 10K OHM J |
| R615 | 76011104 | CHIP, 1/20W 100K OHM J |
| R616 | 76011822 | CHIP, 1/20W 8.2K OHM J |
| R626 | 76011223 | CHIP, 1/20W 22K OHM J |
| R627 | 76011223 | CHIP, 1/20W 22K OHM J |
| R661 | 76011102 | CHIP, 1/20W 1K OHM J |
| R662 | 76011333 | CHIP, 1/20W 33K OHM J |
| R663 | 76011822 | CHIP, 1/20W 8.2K OHM J |
| R665 | 76011223 | CHIP, 1/20W 22K OHM J |
| R666 | 76011473 | CHIP, 1/20W 47K OHM J |
| R667 | 76011223 | CHIP, 1/20W 22K OHM J |
| R668 | 76011473 | CHIP, 1/20W 47K OHM J |
| R671 | 76011102 | CHIP, 1/20W 1K OHM J |
| R672 | 76011333 | CHIP, 1/20W 33K OHM J |
| R673 | 76011822 | CHIP, 1/20W 8.2K OHM J |
| R674 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R676 | 76011104 | CHIP, 1/20W 100K OHM J |
| R677 | 76011104 | CHIP, 1/20W 100K OHM J |
| R681 | 76011222 | CHIP, 1/20W 2.2K OHM J |
| R682 | 76011473 | CHIP, 1/20W 47K OHM J |
| R683 | 76011223 | CHIP, 1/20W 22K OHM J |
| R684 | 76011223 | CHIP, 1/20W 22K OHM J |
| R687 | 76011103 | CHIP, 1/20W 10K OHM J |
| R688 | 76011224 | CHIP, 1/20W 220K OHM J |
| R693 | 76000445 | CHIP JUMPER, 1608TYPE |

| Location No. | | Parts No. | Description |
|---|---|---|---|
| R697 | | 76553221 | OXIDE METAL FILM, 1W 220 OHM J |
| R698 | | 76011103 | CHIP, 1/20W 10K OHM J |
| R699 | | 76011103 | CHIP, 1/20W 10K OHM J |
| R810 | #1 | 76007061 | CERAMIC COVERED, 2W 1.8 OHM K |
| | #2 | 76120001 | CEMENT RES 141C 2.1W 1R8 K |
| | #3 | 76120001 | CEMENT RES 141C 2.1W 1R8 K |
| | #4 | 76120001 | CEMENT RES 141C 2.1W 1R8 K |
| R818 | | 76011471 | CHIP, 1/20W 470 OHM J |
| R819 | | 76011103 | CHIP, 1/20W 10K OHM J |
| R840 | | 76552562 | OXIDE METAL FILM, 1/2W 5.6K OHM J |
| R841 | | 76011102 | CHIP, 1/20W 1K OHM J |
| R842 | | 76376563 | CARBON FILM, 1/2W 56K OHM J |
| R843 | | 76376563 | CARBON FILM, 1/2W 56K OHM J |
| R844 | | 76011103 | CHIP, 1/20W 10K OHM J |
| R845 | | 76366102 | CARBON FILM, 1/6W 1K OHM J |
| R849 | | 76011101 | CHIP, 1/20W 100 OHM J |
| R854 | | 76381150 | OXIDE METAL FILM, 1/2W 15 OHM J |
| R860 | | 76383473 | OXIDE METAL FILM, 2W 47K OHM J |
| R862 | | 76321689 | OXIDE METAL FILM, 1/2W 6.8 OHM J |
| R864 | | 76552102 | OXIDE METAL FILM, 1/2W 1K OHM J |
| R865 | | 76552390 | OXIDE METAL FILM, 1/2W 39 OHM J |
| R866 | | 76366472 | CARBON FILM, 1/6W 4.7K OHM J |
| R867 | | 76366223 | CARBON FILM, 1/6W 22K OHM J |
| R868 | | 76552470 | OXIDE METAL FILM, 1/2W 47 OHM J |
| R870 | | 76381151 | OXIDE METAL FILM, 1/2W 150 OHM J |
| R871 | | 76382680 | OXIDE METAL FILM, 1W 68 OHM J |
| R873 | | 76552100 | OXIDE METAL FILM, 1/2W 10 OHM J |
| R874 | | 76366150 | CARBON FILM, 1/6W 15 OHM J |
| R881 | | 76011102 | CHIP, 1/20W 1K OHM J |
| R883 | | 76381102 | OXIDE METAL FILM, 1/2W 1K OHM J |
| R885 | | 76366471 | CARBON FILM, 1/6W 470 OHM J |
| R893 | | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R894 | | 76011103 | CHIP, 1/20W 10K OHM J |
| ⚠ R899 | | 76010001 | CARBON FILM, 1/2W 3.9M OHM J |
| R900 | | 76000892 | FUSIBLE, 1W 1.2 OHM J |
| R901 | | 76366331 | CARBON FILM, 1/6W 330 OHM J |
| R903 | | 76552101 | OXIDE METAL FILM, 1/2W 100 OHM J |
| R905 | | 76872180 | CHIP, 1/16W 18 OHM J |
| R906 | | 76872271 | CHIP, 1/16W 270 OHM J |
| R908 | | 76872560 | CHIP, 1/16W 56 OHM J |
| R909 | | 76872270 | CHIP, 1/16W 27 OHM J |
| R910 | | 76322568 | OXIDE METAL FILM, 1W 0.56 OHM J |
| R911 | | 76366331 | CARBON FILM, 1/6W 330 OHM J |
| R913 | | 76552101 | OXIDE METAL FILM, 1/2W 100 OHM J |
| R915 | | 76872270 | CHIP, 1/16W 27 OHM J |
| R916 | | 76872271 | CHIP, 1/16W 270 OHM J |
| R918 | | 76872560 | CHIP, 1/16W 56 OHM J |
| R919 | | 76872180 | CHIP, 1/16W 18 OHM J |
| R920 | | 76366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R921 | | 76366331 | CARBON FILM, 1/6W 330 OHM J |
| R923 | | 76552101 | OXIDE METAL FILM, 1/2W 100 OHM J |
| R925 | | 76872330 | CHIP, 1/16W 33 OHM J |
| R926 | | 76872271 | CHIP, 1/16W 270 OHM J |
| R928 | | 76872680 | CHIP, 1/16W 68 OHM J |
| R929 | | 76872180 | CHIP, 1/16W 18 OHM J |
| R930 | | 76366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R931 | | 76568272 | CERAMIC COVERED, 7W 2.7K OHM J |
| R938 | | 76366150 | CARBON FILM, 1/6W 15 OHM J |
| R944 | | 76568272 | CERAMIC COVERED, 7W 2.7K OHM J |
| R945 | | 76366150 | CARBON FILM, 1/6W 15 OHM J |
| R948 | | 76366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R950 | | 76366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R951 | | 76568272 | CERAMIC COVERED, 7W 2.7K OHM J |
| R958 | | 76366150 | CARBON FILM, 1/6W 15 OHM J |
| R961 | | 76872182 | CHIP, 1/16W 1.8K OHM J |
| R962 | | 76872182 | CHIP, 1/16W 1.8K OHM J |
| R963 | | 76872100 | CHIP, 1/16W 10 OHM J |
| R964 | | 76872332 | CHIP, 1/16W 3.3K OHM J |
| R965 | | 76872101 | CHIP, 1/16W 100 OHM J |
| R966 | | 76872122 | CHIP, 1/16W 1.2K OHM J |
| R967 | | 76872122 | CHIP, 1/16W 1.2K OHM J |
| R968 | | 76366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R969 | | 76872122 | CHIP, 1/16W 1.2K OHM J |
| R970 | | 76872122 | CHIP, 1/16W 1.2K OHM J |
| R971 | | 76872152 | CHIP, 1/16W 1.5K OHM J |
| R978 | | 76366222 | CARBON FILM, 1/6W 2.2K OHM J |

| Location No. | Parts No. | Description |
|---|---|---|
| R987 | 76872101 | CHIP, 1/16W 100 OHM J |
| R988 | 76366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R991 | 76366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R992 | 76366222 | CARBON FILM, 1/6W 2.2K OHM J |
| R4430 | 76381150 | OXIDE METAL FILM, 1/2W 15 OHM J |
| R4431 | 76366102 | CARBON FILM, 1/6W 1K OHM J |
| R7102 | 76872681 | CHIP, 1/16W 680 OHM J |
| R7103 | 76872102 | CHIP, 1/16W 1K OHM J |
| R7104 | 76872102 | CHIP, 1/16W 1K OHM J |
| R7105 | 76871221 | CHIP, 1/8W 220 OHM J |
| R7106 | 76871221 | CHIP, 1/8W 220 OHM J |
| R7107 | 76872101 | CHIP, 1/16W 100 OHM J |
| R7108 | 76872332 | CHIP, 1/16W 3.3K OHM J |
| R7109 | 76872333 | CHIP, 1/16W 33K OHM J |
| R7110 | 76872273 | CHIP, 1/16W 27K OHM J |
| R7111 | 76872333 | CHIP, 1/16W 33K OHM J |
| R7112 | 76872151 | CHIP, 1/16W 150 OHM J |
| R7113 | 76872751 | CHIP, 1/16W 750 OHM J |
| R7114 | 76872681 | CHIP, 1/16W 680 OHM J |
| R7115 | 76871471 | CHIP, 1/8W 470 OHM J |
| R7116 | 76871471 | CHIP, 1/8W 470 OHM J |
| R7117 | 76872101 | CHIP, 1/16W 100 OHM J |
| R7118 | 76872101 | CHIP, 1/16W 100 OHM J |
| R7119 | 76871100 | CHIP, 1/8W 10 OHM J |
| R7120 | 76871100 | CHIP, 1/8W 10 OHM J |
| R7121 | 76871100 | CHIP, 1/8W 10 OHM J |
| R7122 | 76871100 | CHIP, 1/8W 10 OHM J |
| R7123 | 76871100 | CHIP, 1/8W 10 OHM J |
| R7124 | 76871100 | CHIP, 1/8W 10 OHM J |
| R7125 | 76871100 | CHIP, 1/8W 10 OHM J |
| R7126 | 76871100 | CHIP, 1/8W 10 OHM J |
| R7127 | 76552331 | OXIDE METAL FILM, 1/2W 330 OHM J |
| R7128 | 76872751 | CHIP, 1/16W 750 OHM J |
| R7129 | 76872122 | CHIP, 1/16W 1.2K OHM J |
| R7130 | 76872683 | CHIP, 1/16W 68K OHM J |
| R7131 | 76872683 | CHIP, 1/16W 68K OHM J |
| R7132 | 76872751 | CHIP, 1/16W 750 OHM J |
| R7133 | 76872122 | CHIP, 1/16W 1.2K OHM J |
| R7134 | 76872102 | CHIP, 1/16W 1K OHM J |
| R7135 | 76553100 | OXIDE METAL FILM, 1W 10 OHM J |
| R7136 | 76321229 | OXIDE METAL FILM, 1/2W 2.2 OHM J |
| R7137 | 76553100 | OXIDE METAL FILM, 1W 10 OHM J |
| R7138 | 76322229 | OXIDE METAL FILM, 1W 2.2 OHM J |
| R7139 | 76554221 | OXIDE METAL FILM, 2W 220 OHM J |
| R7140 | 76872220 | CHIP, 1/16W 22 OHM J |
| R7141 | 76872220 | CHIP, 1/16W 22 OHM J |
| R7701 | 76011392 | CHIP, 1/20W 3.9K OHM J |
| R7702 | 76000445 | CHIP JUMPER, 1608TYPE |
| R7707 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R7708 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R7710 | 76383221 | OXIDE METAL FILM, 2W 220 OHM J |
| R7711 | 76339189 | OXIDE METAL FILM, 2W 1.8 OHM J |
| R7712 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R7713 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R7715 | 76383221 | OXIDE METAL FILM, 2W 220 OHM J |
| R7716 | 76339189 | OXIDE METAL FILM, 2W 1.8 OHM J |
| R7717 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R7718 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R7720 | 76383221 | OXIDE METAL FILM, 2W 220 OHM J |
| R7721 | 76339189 | OXIDE METAL FILM, 2W 1.8 OHM J |
| R7722 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R7723 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R7725 | 76383221 | OXIDE METAL FILM, 2W 220 OHM J |
| R7726 | 76339189 | OXIDE METAL FILM, 2W 1.8 OHM J |
| R7727 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R7728 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R7730 | 76383221 | OXIDE METAL FILM, 2W 220 OHM J |
| R7731 | 76339189 | OXIDE METAL FILM, 2W 1.8 OHM J |
| R7732 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R7733 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R7735 | 76383221 | OXIDE METAL FILM, 2W 220 OHM J |
| R7736 | 76339189 | OXIDE METAL FILM, 2W 1.8 OHM J |
| R7743 | 76322338 | OXIDE METAL FILM, 1W 0.33 OHM J |
| R7744 | 76322338 | OXIDE METAL FILM, 1W 0.33 OHM J |
| R7745 | 76011101 | CHIP, 1/20W 100 OHM J |
| R7746 | 76011101 | CHIP, 1/20W 100 OHM J |

| Location No. | Parts No. | Description |
|---|---|---|
| R7747 | 76011221 | CHIP, 1/20W 220 OHM J |
| R7748 | 76011221 | CHIP, 1/20W 220 OHM J |
| R7749 | 76011102 | CHIP, 1/20W 1K OHM J |
| R7750 | 76011332 | CHIP, 1/20W 3.3K OHM J |
| R7751 | 76011153 | CHIP, 1/20W 15K OHM J |
| R7752 | 76011822 | CHIP, 1/20W 8.2K OHM J |
| R7753 | 76011101 | CHIP, 1/20W 100 OHM J |
| R7754 | 76011333 | CHIP, 1/20W 33K OHM J |
| R7755 | 76011153 | CHIP, 1/20W 15K OHM J |
| R7756 | 76011153 | CHIP, 1/20W 15K OHM J |
| R7757 | 76011681 | CHIP, 1/20W 680 OHM J |
| R7758 | 76011332 | CHIP, 1/20W 3.3K OHM J |
| R7760 | 76011682 | CHIP, 1/20W 6.8K OHM J |
| R7761 | 76011123 | CHIP, 1/20W 12K OHM J |
| R7762 | 76011682 | CHIP, 1/20W 6.8K OHM J |
| R7763 | 76011123 | CHIP, 1/20W 12K OHM J |
| R7765 | 76011103 | CHIP, 1/20W 10K OHM J |
| R7766 | 76366103 | CARBON FILM, 1/6W 10K OHM J |
| R7767 | 76011103 | CHIP, 1/20W 10K OHM J |
| R7768 | 76011103 | CHIP, 1/20W 10K OHM J |
| R7769 | 76011103 | CHIP, 1/20W 10K OHM J |
| R7770 | 76011103 | CHIP, 1/20W 10K OHM J |
| R7771 | 76011103 | CHIP, 1/20W 10K OHM J |
| R7772 | 76011473 | CHIP, 1/20W 47K OHM J |
| R7773 | 76011103 | CHIP, 1/20W 10K OHM J |
| R7774 | 76011103 | CHIP, 1/20W 10K OHM J |
| R7801 | 76383471 | OXIDE METAL FILM, 2W 470 OHM J |
| R7802 | 76383681 | OXIDE METAL FILM, 2W 680 OHM J |
| R7880 | 76011221 | CHIP, 1/20W 220 OHM J |
| R7881 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R7882 | 76011103 | CHIP, 1/20W 10K OHM J |
| R7883 | 76011103 | CHIP, 1/20W 10K OHM J |
| R7884 | 76011103 | CHIP, 1/20W 10K OHM J |
| R7885 | 76366472 | CARBON FILM, 1/6W 4.7K OHM J |
| R7886 | 76011104 | CHIP, 1/20W 100K OHM J |
| R7887 | 76366103 | CARBON FILM, 1/6W 10K OHM J |
| R7890 | 76011331 | CHIP, 1/20W 330 OHM J |
| R7891 | 76011331 | CHIP, 1/20W 330 OHM J |
| R7892 | 76366472 | CARBON FILM, 1/6W 4.7K OHM J |
| R7893 | 76011472 | CHIP, 1/20W 4.7K OHM J |
| R7910 | 76011221 | CHIP, 1/20W 220 OHM J |
| R7911 | 76011221 | CHIP, 1/20W 220 OHM J |
| R7912 | 76011101 | CHIP, 1/20W 100 OHM J |
| R7913 | 76011101 | CHIP, 1/20W 100 OHM J |
| R7931 | 76000445 | CHIP JUMPER, 1608TYPE |
| R9501 | 76872101 | CHIP, 1/16W 100 OHM J |
| R9503 | 76872122 | CHIP, 1/16W 1.2K OHM J |
| R9504 | 76872122 | CHIP, 1/16W 1.2K OHM J |
| R9607 | 76872101 | CHIP, 1/16W 100 OHM J |
| R9608 | 76872122 | CHIP, 1/16W 1.2K OHM J |
| R9609 | 76872122 | CHIP, 1/16W 1.2K OHM J |
| RA71 | 76366273 | CARBON FILM, 1/6W 27K OHM J |
| RA72 | 76366153 | CARBON FILM, 1/6W 15K OHM J |
| RA73 | 76366822 | CARBON FILM, 1/6W 8.2K OHM J |
| RA76 | 76366822 | CARBON FILM, 1/6W 8.2K OHM J |
| RA77 | 76366153 | CARBON FILM, 1/6W 15K OHM J |
| RA78 | 76366273 | CARBON FILM, 1/6W 27K OHM J |
| RA79 | 76366823 | CARBON FILM, 1/6W 82K OHM J |
| RB01 | 76366391 | CARBON FILM, 1/6W 390 OHM J |
| RB04 | 76366473 | CARBON FILM, 1/6W 47K OHM J |
| RB05 | 76366102 | CARBON FILM, 1/6W 1K OHM J |
| RB15 | 24366471 | CARBON FILM, 1/6W 470 OHM J |
| RB19 | 24366470 | CARBON FILM, 1/6W 47 OHM J |
| RB51 | 24366224 | CARBON FILM, 1/6W 220K OHM J |
| RB52 | 24366123 | CARBON FILM, 1/6W 12K OHM J |
| RB53 | 24366123 | CARBON FILM, 1/6W 12K OHM J |
| RB54 | 24366123 | CARBON FILM, 1/6W 12K OHM J |
| RB55 | 24366224 | CARBON FILM, 1/6W 220K OHM J |
| RB56 | 24366151 | CARBON FILM, 1/6W 150 OHM J |
| RB57 | 24366103 | CARBON FILM, 1/6W 10K OHM J |
| RB58 | 24366103 | CARBON FILM, 1/6W 10K OHM J |
| RB59 | 24366122 | CARBON FILM, 1/6W 1.2K OHM J |
| RB60 | 24366224 | CARBON FILM, 1/6W 220K OHM J |
| RB61 | 24366100 | CARBON FILM, 1/6W 10 OHM J |
| RB62 | 24366272 | CARBON FILM, 1/6W 2.7K OHM J |
| RB63 | 24366271 | CARBON FILM, 1/6W 270 OHM J |

| Location No. | Parts No. | Description |
|---|---|---|
| RB67 | 24366221 | CARBON FILM, 1/6W 220 OHM J |
| RB69 | 24366272 | CARBON FILM, 1/6W 2.7K OHM J |
| RB70 | 24366331 | CARBON FILM, 1/6W 330 OHM J |
| RB504 | 76366104 | CARBON FILM, 1/6W 100K OHM J |
| RB505 | 76366101 | CARBON FILM, 1/6W 100 OHM J |
| RB506 | 76366390 | CARBON FILM, 1/6W 39 OHM J |
| RB561 | 76366101 | CARBON FILM, 1/6W 100 OHM J |
| RB562 | 76366104 | CARBON FILM, 1/6W 100K OHM J |
| RB563 | 76366390 | CARBON FILM, 1/6W 39 OHM J |
| RB567 | 76366223 | CARBON FILM, 1/6W 22K OHM J |
| RV20 | 76366750 | CARBON FILM, 1/6W 75 OHM J |
| RV21 | 76366750 | CARBON FILM, 1/6W 75 OHM J |
| RV22 | 76366750 | CARBON FILM, 1/6W 75 OHM J |
| RV23 | 76366101 | CARBON FILM, 1/6W 100 OHM J |
| RV33 | 76366750 | CARBON FILM, 1/6W 75 OHM J |
| RV34 | 76366750 | CARBON FILM, 1/6W 75 OHM J |
| RV35 | 76366750 | CARBON FILM, 1/6W 75 OHM J |
| RV36 | 76366750 | CARBON FILM, 1/6W 75 OHM J |
| RV37 | 76366750 | CARBON FILM, 1/6W 75 OHM J |
| RV40 | 76366750 | CARBON FILM, 1/6W 75 OHM J |
| RV61 | 76366101 | CARBON FILM, 1/6W 100 OHM J |
| RV85 | 76366471 | CARBON FILM, 1/6W 470 OHM J |
| RV86 | 76366471 | CARBON FILM, 1/6W 470 OHM J |
| RV89 | 76366680 | CARBON FILM, 1/6W 68 OHM J |
| GJ102 | 76000445 | CHIP JUMPER, 1608TYPE |
| GJ105 | 76000445 | CHIP JUMPER, 1608TYPE |
| GJ107 | 76000445 | CHIP JUMPER, 1608TYPE |
| GJ911 | 76000445 | CHIP JUMPER, 1608TYPE |
| GR31 | 76000445 | CHIP JUMPER, 1608TYPE |
| GR32 | 76000445 | CHIP JUMPER, 1608TYPE |
| GR103 | 76000445 | CHIP JUMPER, 1608TYPE |
| GR601 | 76000445 | CHIP JUMPER, 1608TYPE |

**COILS & TRANSFORMERS**

| | | |
|---|---|---|
| L302 | 23248400 | COIL, CHOKE, TLN3299D |
| L303 | 23248400 | COIL, CHOKE, TLN3299D |
| L304 | 23103302 | FERRITE CHOKE, TEM2011AH |
| L305 | 23103307 | FERRITE CHOKE, TEM2014AA |
| L310 | 23289028 | COIL, PEAKING, TRF4101AT |
| L401 | 23289009 | COIL, PEAKING, TRF4560AF |
| ⚠ L402 | 23248455 | COIL, CHOKE, TLN3534AH |
| L403 | 23103302 | FERRITE CHOKE, TEM2011AH |
| L406 | 23248413 | COIL, CHOKE, TLN3351AD |
| L407 | 23103307 | FERRITE CHOKE, TEM2014AA |
| L408 | 23103307 | FERRITE CHOKE, TEM2014AA |
| ⚠ L441 | 23233136 | COIL, LINEARITY, TLN2222AH |
| ⚠ L462 | 23231431 | COIL, DEFLECTION YOKE, TDY707RD |
| ⚠ L463 | 23231431 | COIL, DEFLECTION YOKE, TDY707RD |
| ⚠ L464 | 23231431 | COIL, DEFLECTION YOKE, TDY707RD |
| L472 | 23102564 | COIL, CPM29.1VM6T, MAG-1136 |
| L473 | 23102564 | COIL, CPM29.1VM6T, MAG-1136 |
| L474 | 23102564 | COIL, CPM29.1VM6T, MAG-1136 |
| L490 | 23289981 | COIL, PEAKING, TRF4330AZ |
| L840 | 23289025 | COIL, PEAKING, TRF4330AT |
| L841 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L850 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L851 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L852 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L854 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L861 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L862 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L864 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L880 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L881 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L885 | 23248400 | COIL, CHOKE, TLN3299D |
| L886 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L887 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L888 | 23248446 | COIL, CHOKE, TLN3462AH |
| L891 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L892 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L893 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L894 | 23248432 | COIL, CHOKE, TLN3499AH |
| L895 | 23248432 | COIL, CHOKE, TLN3499AH |
| L896 | 23248432 | COIL, CHOKE, TLN3499AH |
| L902 | 23289993 | COIL, PEAKING, TRF41R5AF |
| L904 | 23289989 | COIL, PEAKING, TRF4120AF |

| Location No. | Parts No. | Description |
|---|---|---|
| L905 | 23289014 | COIL, PEAKING, TRF46R8AF |
| L911 | 23289996 | COIL, PEAKING, TRF4220AF |
| L913 | 23289993 | COIL, PEAKING, TRF41R5AF |
| L915 | 23289014 | COIL, PEAKING, TRF46R8AF |
| L916 | 23289989 | COIL, PEAKING, TRF4120AF |
| L923 | 23289993 | COIL, PEAKING, TRF41R5AF |
| L924 | 23289989 | COIL, PEAKING, TRF4120AF |
| L925 | 23289014 | COIL, PEAKING, TRF46R8AF |
| L7101 | 23289022 | COIL, PEAKING, TRF4100AT |
| L7102 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L7103 | 23103304 | FERRITE CHOKE, TEM2011AA |
| L7104 | 23103323 | FERRITE CORE, HC5-035 |
| L7710 | 23248400 | COIL, CHOKE, TLN3299D |
| L7711 | 23248400 | COIL, CHOKE, TLN3299D |
| LB51 | 23237987 | COIL, PEAKING, TRF4100AC |
| LV13 | 23289985 | COIL, PEAKING, TRF4100AF |
| LV20 | 23221156 | COIL, PEAKING, TRF4560AJ |
| LV36 | 23289009 | COIL, PEAKING, TRF4560AF |
| LV37 | 23289009 | COIL, PEAKING, TRF4560AF |
| T400 | 23224401 | TRANSFORMER, FOCUS, TLN2220AH |
| T401 | 23224396 | TRANSFORMER, TLN1080AH |
| T461A | 23192972 | ANODE CAP ASSY, TCC5609AT |
| T4617 | 23236941 | TRANSFORMER, HORIZ OUTPUT, SERVICE, TFR30947D |
| ⚠ T801 | 23211836 | COIL, LINE FILTER, TRF3197AH |
| ⚠ T840 | 23217790 | TRANSFORMER, CONVERTER TPW3425BH |
| ⚠ T862 | 23217669 | TRANSFORMER, CONVERTER TPW3549AS |
| T865 | 23224392 | TRANSFORMER, PULSE TLN2229AH |
| Z801 | 23103840 | FERRITE CORE, TFE1013 |
| ZV60 | 23103778 | FERRITE CORE, TFE1008 |
| **SEMICONDUCTORS** | | |
| Q241 | 23205342 | TRANSISTOR, 2SC2482(F) |
| Q301 | 23085526 | IC, LA7833-S-E |
| Q302 | 23085309 | IC, TA1317ANG |
| Q305 | 23205346 | TRANSISTOR, KTA2014Y/P |
| Q306 | 23085872 | IC, OPE-AMP 14PIN DIP TA75902PG(5,J) |
| Q370 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q371 | 23205346 | TRANSISTOR, KTA2014Y/P |
| Q372 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q400 | 23205370 | TRANSISTOR, 2SC4686A(Q) |
| Q402 | 23205416 | TRANSISTOR, FET, 2SK2962(F) |
| Q404 | 23205405 | TRANSISTOR, 2SC5859(FA,Q) |
| Q405 | 23205346 | TRANSISTOR, KTA2014Y/P |
| Q406 | 23205347 | TRANSISTOR, KTC4075Y/P |
| ⚠ Q408 | 23205346 | TRANSISTOR, KTA2014Y/P |
| Q409 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q410 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q411 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q420 | 23205342 | TRANSISTOR, 2SC2482(F) |
| Q425 | 23205350 | TRANSISTOR, FET, 2SK2920(Q) |
| Q428 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q470 | 23205516 | TRANSISTOR, 2SA1320(F) |
| Q471 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q472 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q473 | 23205346 | TRANSISTOR, KTA2014Y/P |
| Q601 | 23009603 | IC, AN7580 |
| Q612 | 23205346 | TRANSISTOR, KTA2014Y/P |
| Q613 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q614 | 23205327 | TRANSISTOR, RN1406(F) |
| Q661 | 23205424 | TRANSISTOR, KTC2875B/P |
| Q662 | 23205424 | TRANSISTOR, KTC2875B/P |
| Q663 | 23085575 | IC, OP AMP, BA4558 |
| Q664 | 23205325 | TRANSISTOR, RN2404(F) |
| Q681 | 23205424 | TRANSISTOR, KTC2875B/P |
| Q682 | 23205424 | TRANSISTOR, KTC2875B/P |
| Q711 | 23205269 | TRANSISTOR, VCBO-160V IC-1.5A 2SA2005 |
| Q712 | 23205270 | TRANSISTOR, VCBO 160V 1.5A 2SC5511 |
| Q751 | 23135074 | IC, STK394-250A |
| Q752 | 23135074 | IC, STK394-250A |
| Q765 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q766 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q767 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q768 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q769 | 23085560 | IC, TA75S393F(F) |
| Q782 | 23085531 | IC, NJM79M05FA |
| Q784 | 23085424 | IC, KIA7805API-U/P |

| Location No. | Parts No. | Description |
|---|---|---|
| Q785 | 23085596 | IC, PST994D |
| Q794 | 23085560 | IC, TA75S393F(F) |
| Q795 | 23085691 | IC, TC4066BP(N,F) |
| Q796 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q801 | 23135066 | IC, STRZ4479 |
| Q840 | 23085559 | IC, MIP280 |
| ⚠ Q841 | 23085431 | IC, PHOTO COUPLER, PS2581L1(D) |
| ⚠ Q842 | 23085431 | IC, PHOTO COUPLER, PS2581L1(D) |
| Q843 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q844 | 23205347 | TRANSISTOR, KTC4075Y/P |
| ⚠ Q862 | 23085431 | IC, PHOTO COUPLER, PS2581L1(D) |
| ⚠ Q881 | 23085524 | IC, SE116N, LF4 |
| Q894 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q901 | 23205412 | TRANSISTOR, 2SC3942 |
| Q902 | 23205415 | TRANSISTOR, 2SC3950E |
| Q911 | 23205412 | TRANSISTOR, 2SC3942 |
| Q912 | 23205415 | TRANSISTOR, 2SC3950E |
| Q913 | 23205357 | TRANSISTOR, KTA1504S Y/P |
| Q921 | 23205412 | TRANSISTOR, 2SC3942 |
| Q922 | 23205415 | TRANSISTOR, 2SC3950E |
| Q961 | 23205358 | TRANSISTOR, KTC3875S Y/P |
| Q962 | 23205357 | TRANSISTOR, KTA1504S Y/P |
| Q973 | 23205357 | TRANSISTOR, KTA1504S Y/P |
| Q4430 | 23205444 | TRANSISTOR, 2SC2236-Y(F) |
| Q7101 | 23205358 | TRANSISTOR, KTC3875S Y/P |
| Q7102 | 23205358 | TRANSISTOR, KTC3875S Y/P |
| Q7103 | 23085635 | IC, 2SC3437-Y(TE85L,F) |
| Q7104 | 23205312 | TRANSISTOR, 2SC1815-GR(F) |
| Q7105 | 23205358 | TRANSISTOR, KTC3875S Y/P |
| Q7106 | 23205358 | TRANSISTOR, KTC3875S Y/P |
| Q7107 | 23205357 | TRANSISTOR, KTA1504S Y/P |
| Q7108 | 23205358 | TRANSISTOR, KTC3875S Y/P |
| Q7109 | 23205357 | TRANSISTOR, KTA1504S Y/P |
| Q7761 | 23205346 | TRANSISTOR, KTA2014Y/P |
| Q7762 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q7763 | 23205347 | TRANSISTOR, KTC4075Y/P |
| Q7764 | 23205346 | TRANSISTOR, KTA2014Y/P |
| QB01 | 23205499 | TRANSISTOR, KTC3198 Y/P |
| QB51 | 23319808 | IC, M5218AP |
| QB52 | 23314965 | TRANSISTOR, KTC3198 Y |
| QB53 | 23314962 | TRANSISTOR, KTA1266 Y |
| QB502 | 23205307 | TRANSISTOR, 2SA562TM-Y(F) |
| QB508 | 23205307 | TRANSISTOR, 2SA562TM-Y(F) |
| QB509 | 23205337 | TRANSISTOR, 2SC2878-A(TEM) |
| QV48 | 23205499 | TRANSISTOR, KTC3198 Y/P |
| D301 | 23357755 | DIODE, ZENER, MA8075-H |
| D302 | 23357366 | DIODE, FR105-B5 |
| D303 | 23357872 | DIODE, ZENER, MTZJ15C |
| D304 | 23357917 | DIODE, SC570A |
| D305 | 23357365 | DIODE, 1N4004A-B5 |
| D306 | 23357365 | DIODE, 1N4004A-B5 |
| D327 | 23357861 | DIODE, ZENER, MTZJ11A |
| D333 | 23357861 | DIODE, ZENER, MTZJ11A |
| D334 | 23357861 | DIODE, ZENER, MTZJ11A |
| D336 | 23357745 | DIODE, ZENER, MA8056-M |
| D337 | 23357745 | DIODE, ZENER, MA8056-M |
| D365 | 23357755 | DIODE, ZENER, MA8075-H |
| D370 | 23357703 | DIODE, 1SS355 |
| D401 | 23357510 | DIODE, AG01 |
| D402 | 23357366 | DIODE, FR105-B5 |
| D404 | 23357705 | DIODE, ERC06-15 |
| D406 | 23357366 | DIODE, FR105-B5 |
| D411 | 23357784 | DIODE, ZENER, MA8180-M |
| D412 | 23357694 | DIODE, RP1H |
| D413 | 23357694 | DIODE, RP1H |
| D414 | 23357366 | DIODE, FR105-B5 |
| D415 | 23357366 | DIODE, FR105-B5 |
| D418 | 23357901 | DIODE, ZENER, MTZJ33C |
| D419 | 23357703 | DIODE, 1SS355 |
| D420 | 23357697 | DIODE, 1SS133 |
| D421 | 23357366 | DIODE, FR105-B5 |
| D425 | 23357366 | DIODE, FR105-B5 |
| D426 | 23357784 | DIODE, ZENER, MA8180-M |
| D450 | 23357365 | DIODE, 1N4004A-B5 |
| D461 | 23357701 | DIODE, FMQ-3GU |
| D470 | 23357770 | DIODE, ZENER, MA8120-L |

| Location No. | Parts No. | Description |
|---|---|---|
| ! D490 | 23357748 | DIODE, ZENER, MA8062-M |
| D491 | 23357703 | DIODE, 1SS355 |
| D492 | 23357765 | DIODE, ZENER, MA8100-M |
| D505 | 23357893 | DIODE, ZENER, MTZJ27C |
| D601 | 23357703 | DIODE, 1SS355 |
| D602 | 23357703 | DIODE, 1SS355 |
| D603 | 23357703 | DIODE, 1SS355 |
| D604 | 23357703 | DIODE, 1SS355 |
| D605 | 23357703 | DIODE, 1SS355 |
| D606 | 23357703 | DIODE, 1SS355 |
| D607 | 23357703 | DIODE, 1SS355 |
| D608 | 23357703 | DIODE, 1SS355 |
| D609 | 23357703 | DIODE, 1SS355 |
| D611 | 23357703 | DIODE, 1SS355 |
| D612 | 23357703 | DIODE, 1SS355 |
| D613 | 23357703 | DIODE, 1SS355 |
| D614 | 23357703 | DIODE, 1SS355 |
| D615 | 23357703 | DIODE, 1SS355 |
| D616 | 23357703 | DIODE, 1SS355 |
| D617 | 23357703 | DIODE, 1SS355 |
| D628 | 23357771 | DIODE, ZENER, MA8120-M |
| D751 | 23357104 | DIODE, 1SS244 |
| D752 | 23357104 | DIODE, 1SS244 |
| D801 | 23357712 | DIODE, D5SB60, 4009 F05 |
| D840 | 23362046 | DIODE, LN1WBA60 4101 |
| D841 | 23357746 | DIODE, ZENER, MA8056-H |
| D842 | 23357738 | DIODE, ZENER, MA8047-L |
| D843 | 23357366 | DIODE, FR105-B5 |
| D844 | 23357745 | DIODE, ZENER, MA8056-M |
| D845 | 23357703 | DIODE, 1SS355 |
| D846 | 23357684 | DIODE, ZENER, RD3.0ESA B2 |
| D847 | 23357684 | DIODE, ZENER, RD3.0ESA B2 |
| D848 | 23357703 | DIODE, 1SS355 |
| D851 | 23362051 | DIODE, D4SBL20U 4100 |
| D852 | 23357860 | DIODE, RL2Z |
| D853 | 23357860 | DIODE, RL2Z |
| D854 | 23357366 | DIODE, FR105-B5 |
| D862 | 23357366 | DIODE, FR105-B5 |
| D864 | 23357366 | DIODE, FR105-B5 |
| D873 | 23357893 | DIODE, ZENER, MTZJ27C |
| D875 | 23357852 | DIODE, ZENER, MTZJ9.1C |
| D876 | 23357905 | DIODE, ZENER, MTZJ36C |
| D878 | 23357850 | DIODE, ZENER, MTZJ9.1A |
| D879 | 23357893 | DIODE, ZENER, MTZJ27C |
| ⚠ D880 | 23357828 | DIODE, ZENER, MTZJ4.3B |
| D881 | 23357703 | DIODE, 1SS355 |
| D883 | 23357105 | DIODE, RL2 |
| D884 | 23357105 | DIODE, RL2 |
| D885 | 23362049 | DIODE, D4SBS4 4100 |
| D891 | 23362136 | DIODE, YG801C04RF119 |
| D892 | 23357408 | DIODE, FMX-12S(023-108) |
| D893 | 23357408 | DIODE, FMX-12S(023-108) |
| D894 | 23357703 | DIODE, 1SS355 |
| D895 | 23357748 | DIODE, ZENER, MA8062-M |
| ⚠ D899 | 76019485 | VARISTOR, TNR10V431K |
| D901 | 23357697 | DIODE, 1SS133 |
| D906 | 23357104 | DIODE, 1SS244 |
| D907 | 23357104 | DIODE, 1SS244 |
| D908 | 23357104 | DIODE, 1SS244 |
| D909 | 23357104 | DIODE, 1SS244 |
| D912 | 23357697 | DIODE, 1SS133 |
| D913 | 23357496 | DIODE, 1S1834(Q) |
| D916 | 23357104 | DIODE, 1SS244 |
| D917 | 23357104 | DIODE, 1SS244 |
| D918 | 23357104 | DIODE, 1SS244 |
| D919 | 23357104 | DIODE, 1SS244 |
| D921 | 23357697 | DIODE, 1SS133 |
| D926 | 23357104 | DIODE, 1SS244 |
| D927 | 23357104 | DIODE, 1SS244 |
| D928 | 23357104 | DIODE, 1SS244 |
| D929 | 23357104 | DIODE, 1SS244 |
| D936 | 23357496 | DIODE, 1S1834(Q) |
| D940 | 23357697 | DIODE, 1SS133 |
| D941 | 23357697 | DIODE, 1SS133 |
| D942 | 23357697 | DIODE, 1SS133 |
| D943 | 23357697 | DIODE, 1SS133 |

| Location No. | Parts No. | Description |
|---|---|---|
| D944 | 23357697 | DIODE, 1SS133 |
| D945 | 23357697 | DIODE, 1SS133 |
| D962 | 23357748 | DIODE, ZENER, MA8062-M |
| D967 | 23357496 | DIODE, 1S1834(Q) |
| D4430 | 23357365 | DIODE, 1N4004A-B5 |
| D4431 | 23357767 | DIODE, ZENER, MA8110-L |
| D7101 | 23357697 | DIODE, 1SS133 |
| D7102 | 23357697 | DIODE, 1SS133 |
| D7730 | 23357647 | DIODE, ZENER, RD6.2ESA B2 |
| D7731 | 23357647 | DIODE, ZENER, RD6.2ESA B2 |
| D7760 | 23357703 | DIODE, 1SS355 |
| D7761 | 23357629 | DIODE, ZENER, RD8.2ESA B2 |
| D7762 | 23357629 | DIODE, ZENER, RD8.2ESA B2 |
| D7763 | 23357703 | DIODE, 1SS355 |
| D7764 | 23357703 | DIODE, 1SS355 |
| D7766 | 23357703 | DIODE, 1SS355 |
| D7790 | 23357703 | DIODE, 1SS355 |
| D7791 | 23357703 | DIODE, 1SS355 |
| D7792 | 23357703 | DIODE, 1SS355 |
| D7793 | 23357759 | DIODE, ZENER, MA8082-M |
| D7806 | 23357703 | DIODE, 1SS355 |
| DB01 | 23358606 | DIODE, LED RED, SLR-56VC3FPQ |
| DB03 | 23358522 | DIODE, LED, SIR-56SR3F |
| DB51 | 23358573 | PHOTO DIODE, PIN 940NM HPI-2FER4 |
| DB52 | 23118859 | DIODE, 1SS133 |
| DB54 | 23118859 | DIODE, 1SS133 |
| DB55 | 23118859 | DIODE, 1SS133 |
| DB56 | 23118859 | DIODE, 1SS133 |
| DB501 | 23357697 | DIODE, 1SS133 |
| DB504 | 23357697 | DIODE, 1SS133 |

**MISCELLANEOUS**

| | | |
|---|---|---|
| A510 | 23030815 | SCREW, WOOD, PTD #6 X 3/4 |
| B231 | 23738088 | SCREW, BTBW3X12ECO |
| B233 | 23738085 | SCREW, BTB4X12 ECO |
| BB10 | 23713729 | SOCKET, B-B 8P 2.5MM |
| BB11 | 23713729 | SOCKET, B-B 8P 2.5MM |
| BB20 | 23713729 | SOCKET, B-B 8P 2.5MM |
| BB21 | 23713729 | SOCKET, B-B 8P 2.5MM |
| BB51A | 23965241 | TAPE, CC #12 10MM L30M |
| BB60 | 23713014 | PLUG, B-B 16P 1.5 |
| BB70 | 23713810 | PLUG , TAC-A46P-B1 |
| BB100 | 23368627 | CONNECTOR, BRIDGE B-B 8P 2.5JST 08TM-2.5FJ-E |
| BB200 | 23368627 | CONNECTOR, BRIDGE B-B 8P 2.5JST 08TM-2.5FJ-E |
| ⚠ F470 | 23144389 | FUSE, AXIAL 125V 1.6A |
| ⚠ F801 | 23144319 | FUSE, CARTRIDGE, 125V 8A, 5.2X20 |
| F801A | 23165433 | FUSE HOLDER, 5.2 |
| F801B | 23165433 | FUSE HOLDER, 5.2 |
| ⚠ F840 | 23144704 | FUSE, AXIAL 125V 200MA |
| ⚠ F850 | 23144712 | FUSE, AXIAL 125V 3.0A |
| ⚠ F851 | 23144714 | FUSE, AXIAL 125V 4.0A |
| ⚠ F852 | 23144714 | FUSE, AXIAL 125V 4.0A |
| ⚠ F860 | 23144392 | FUSE, AXIAL 125V 3.15A |
| ⚠ F885 | 23144715 | FUSE, AXIAL 125V 5.0A |
| ⚠ F891 | 23144714 | FUSE, AXIAL 125V 4.0A |
| ⚠ F892 | 23144710 | FUSE, AXIAL 125V 2.0A |
| H002 | 23148378 | IF MODULE, US BUFFER 6M TRAP, MVUS51A |
| MF01 | 23389291 | CABLE, FFC P1.25-16-200 |
| MF03 | 23389290 | CABLE, FFC P1.25-29-70 |
| P101 | 23713755 | PLUG, 4P 2.5MM G, B4B-EH-F1-TV4 |
| P102 | 23713755 | PLUG, 4P 2.5MM G, B4B-EH-F1-TV4 |
| P404 | 23713760 | PLUG, NP 2.5MM G, B9B-EH-F1A |
| P710 | 23713755 | PLUG, 4P 2.5MM G, B4B-EH-F1-TV4 |
| P711 | 23713755 | PLUG, 4P 2.5MM G, B4B-EH-F1-TV4 |
| P712 | 23713755 | PLUG, 4P 2.5MM G, B4B-EH-F1-TV4 |
| ⚠ P800 | 23713702 | PLUG, 2P 11.88MM W VT |
| ⚠ P801 | 23372209 | POWER CORD, U/C FL 125V7A CMC042P JST |
| P880A | 23713759 | PLUG, 8P 2.5MM G, B8B-EH-F1-TV4 |
| P880B | 23713759 | PLUG, 8P 2.5MM G, B8B-EH-F1-TV4 |
| P913 | 23713755 | PLUG, 4P 2.5MM G, B4B-EH-F1-TV4 |
| P915A | 23713760 | PLUG, NP 2.5MM G, B9B-EH-F1A |
| P915B | 23713760 | PLUG, NP 2.5MM G, B9B-EH-F1A |
| P917 | 23713760 | PLUG, NP 2.5MM G, B9B-EH-F1A |
| P918 | 23713755 | PLUG, 4P 2.5MM G, B4B-EH-F1-TV4 |
| P919 | 23713754 | PLUG, 3P 2.5MM G, B3B-EH-F1-TV4 |
| PB22 | 23368578 | PLUG, 4P 2.5MM G, B4B-EH-F1-TV4 |

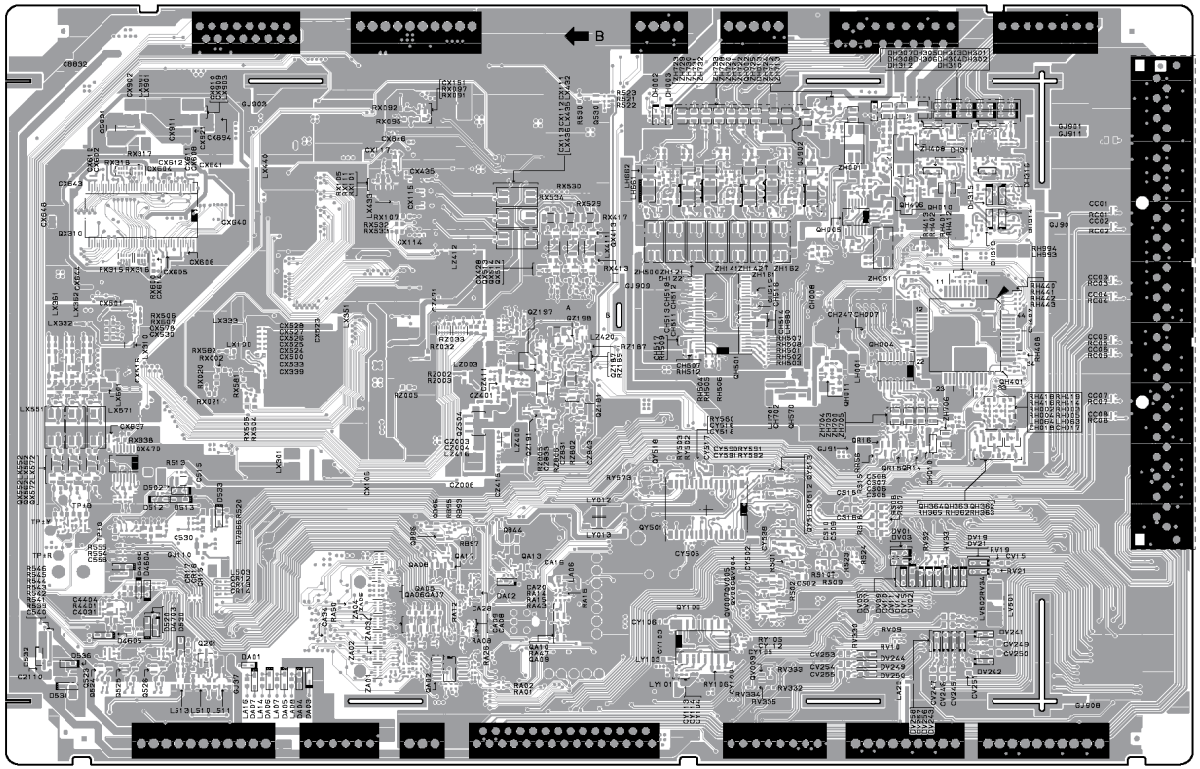
| Location No. | | Parts No. | Description |
|---|---|---|---|
| PB51 | | 23368577 | PLUG, 3P 2.5MM G, B3B-EH-F1-TV4 |
| PB501 | | 23365772 | JACK, EARPHONE, HSJ1406-01-020 |
| PB502 | | 23365772 | JACK, EARPHONE, HSJ1406-01-020 |
| PB503 | | 23713776 | PLUG, 3P 2.5MM W, S3B-EH |
| PV01 | | 23023311 | JACK, PIN 2S6P, LAP5030-0111GC |
| PV02 | | 23023205 | JACK, PIN 10P SMK KARI2 |
| PV03 | | 23023211 | JACK, PIN 7P SMK KARI04 |
| PV05 | | 23023184 | JACK, 1S3P, LAP5100-1502F |
| PV60 | | 23713761 | PLUG, NP 2.5MM G, B10B-EH-F1A |
| SA01 | | 23344505 | SWITCH, PUSH 1C1P |
| SA02 | | 23344505 | SWITCH, PUSH 1C1P |
| SA03 | | 23344505 | SWITCH, PUSH 1C1P |
| SA04 | | 23344505 | SWITCH, PUSH 1C1P |
| SA05 | | 23344505 | SWITCH, PUSH 1C1P |
| SA06 | | 23344505 | SWITCH, PUSH 1C1P |
| SA07 | | 23344505 | SWITCH, PUSH 1C1P |
| SA09 | | 23344505 | SWITCH, PUSH 1C1P |
| ⚠ SR81 | | 23146590 | RELAY, DLS5D1-O(M)0.25W |
| ⚠ SR82 | | 23146584 | RELAY, DC12V, TV5, DG-3 |
| ⚠ V901A | | 23903180 | SOCKET, ISHM62S-WE ICE |
| V901R | #1 | 23078357 | OTHER, COUPLING R |
| | #2 | 23447326 | COUPLING, R |
| | #3 | 23447981 | COUPLING, RS |
| | #4 | 23447328 | COUPLING, R |
| ⚠ V902A | | 23903180 | SOCKET, ISHM62S-WE ICE |
| V902G | #1 | 23078358 | OTHER, COUPLING G |
| | #2 | 23447324 | COUPLING, G |
| | #3 | 23447982 | COUPLING, GS |
| | #4 | 23447324 | COUPLING, G |
| ⚠ V903A | | 23903180 | SOCKET, ISHM62S-WE ICE |
| V903B | #1 | 23078359 | OTHER, COUPLING B |
| | #2 | 23447327 | COUPLING, B |
| | #3 | 23447983 | COUPLING, BS |
| | #4 | 23447329 | COUPLING, B |
| W661 | | 23351242 | SPEAKER, 160X160 8-OHM 20W SPK-1424AW |
| | | 23151232 | SPEAKER, SPK1235, 160X160 65HZ 8 OHM |
| W662 | | 23351242 | SPEAKER, 160X160 8-OHM 20W SPK-1424AW |
| | | 23151232 | SPEAKER, SPK1235, 160X160 65HZ 8 OHM |
| Z101 | | 23103840 | FERRITE CORE, TFE1013 |
| Z401 | | 23140203 | SPARK GAP, 2.0-3.0KV C-010, AG20PC152F-L3N |
| ⚠ Z410 | | 23110857 | FOCUS PACK, TPA6030 |
| Z450A | | 23507612 | CABLE, ANODE, 400LD FBT-C |
| **PC BOARD ASSEMBLIES** | | | |
| ✻ E021Z | | 23764269 | PC BOARD ASSY, BACK/AV PU PD1735E1 |
| ✻ E022Z | | 23764270 | PC BOARD ASSY, FRONT-CON PU PD1735E2 |
| ✻ E023Z | | 23764271 | PC BOARD ASSY, FRONT-IN PU PD1735E3 |
| ✻ E024Z | | 23764272 | PC BOARD ASSY, REMOTE PU PD1735E4 |
| ✻ E031Z | | 23764273 | PC BOARD ASSY, CRT/SVM/R PU PD1733G1 |
| ✻ E032Z | | 23764274 | PC BOARD ASSY, CRT/SVM/G PU PD1733G2 |
| ✻ E033Z | | 23764275 | PC BOARD ASSY, CRT/SVM/B PU PD1733G3 |
| ✻ E034Z | | 23764276 | PC BOARD ASSY, SVM/DIV PU PD1733G4 |
| ✻ E045Z | | 23788823 | PC BOARD ASSY, IR BLASTER PU PD1289 |
| ✻ U001 | | 23148433 | SCAN CONVERTER MODUL, MHSU12 |
| ✻ U401 | | 23764404 | PC BOARD ASSY, DEFPOWER PU PD2201A |
| ✻ U601 | | 23764268 | PC BOARD ASSY, IF/AUDIO PU PD1731D2 |
| ✻ U711 | | 23764267 | PC BOARD ASSY, CONVER PU PD1731D1 |
| ✻ US01 | | 23764160 | PC BOARD ASSY, SPK/CAPA PU PD2065B |
| ✻ UV02 | | 23148418 | SCAN CONVERTER MODULE, 05HDMI-01A-G MHDM01A |
| **ACCESSORIES** | | | |
| A701 | #1 | 23067099 | CARTON, CARTON |
| | #2 | 23067100 | CARTON, CARTON |
| | #3 | 23015197 | CARTON, CARTON |
| | #4 | 23064558 | CARTON, CARTON |
| A703 | #1 | 23946479 | PACKING, TOP PACKING |
| | #2 | 23946481 | PACKING, TOP PACKING |
| | #3 | 23946500 | PACKING, TOP |
| | #4 | 23946500 | PACKING, TOP |
| A708 | #1 | 23946478 | PACKING, BOTTOM PACKING |
| | #2 | 23946480 | PACKING, BOTTOM PACKING |
| | #3 | 23946499 | PACKING, BOTTOM |
| | #4 | 23946499 | PACKING, BOTTOM |
| A709 | #1 | 23946483 | PACKING, BOTTOM TRAY |
| | #2 | 23946187 | PACKING, BASE TRAY |
| | #3 | 23946211 | PACKING, BASE TRAY |
| | #4 | 23946211 | PACKING, BASE TRAY |
| ⚠ K912 | | 23306626 | REMOCON HAND UNIT IR, MTVUSA CT-90232 |
| K913 | | 23306614 | REMOCON HAND UNIT |
| KB01 | | 23000852 | REMOCON RECEIVER, PIC-37043TE2 |
| ⚠ Y101 | #1 | 23566643 | OWNERS MANUAL, ENGLISH/FRENCH |
| ⚠ | #2 | 23566643 | OWNERS MANUAL, ENGLISH/FRENCH |
| ⚠ | #3 | 23566732 | OWNERS MANUAL, ENGLISH |
| ⚠ | #4 | 23566643 | OWNERS MANUAL, ENGLISH/FRENCH |
| **CABINET PARTS** | | | |
| ⚠ A001 | #1 | 23429055 | CABINET, WOOD |
| ⚠ | #2 | 23429091 | CABINET, WOOD |
| ⚠ | #3 | 23429125 | CABINET, WOOD CABINET SHIP |
| ⚠ | #4 | 23429125 | CABINET, WOOD CABINET SHIP |
| A102 | #1 | 23527268 | GRILLE, SPEAKER GRILLE 51 REG |
| | #2 | 23527269 | GRILLE, SPEAKER GRILLE 57 REG |
| | #3 | 23527279 | GRILLE, SPK GRILLE ASSY |
| | #4 | 23527279 | GRILLE, SPK GRILLE ASSY |
| A160 | | 23469228 | CASTER, TP50H60 |
| ⚠ A201 | #1 | 23530779 | COVER, BEZEL |
| ⚠ | #2 | 23532728 | COVER, BEZEL ASSEY |
| ⚠ | #3 | 23530796 | COVER, BEZEL |
| ⚠ | #4 | 23530796 | COVER, BEZEL |
| A202 | | 23450649 | PANEL, CONTROL ASSY |
| A213 | | 23428187 | DOOR |
| A215 | | 23929911 | PIECE, SNAP-IN GEAR DAMPER CONNON |
| A222 | | 23929910 | PIECE, FILTER |
| A223 | | 23445705 | BUTTON, POWER BUTTON |
| A268 | #1 | 23530772 | COVER, FRONT COVER |
| | #2 | 23530770 | COVER, FRONT COVER |
| | #3 | 23530770 | COVER, FRONT COVER |
| | #4 | 23530770 | COVER, FRONT COVER |
| A329 | #1 | 23433231 | DECORATIVE, PIECE |
| | #2 | 23433230 | DECORATIVE, PIECE |
| | #3 | 23433233 | DECORATIVE, PIECE |
| | #4 | 23433233 | DECORATIVE, PIECE |
| A331 | #1 | 23929897 | PIECE, POLE BOTTOM LEFT |
| | #2 | 23929899 | PIECE, POLE BOTTOM LEFT |
| | #3 | 23929899 | PIECE, POLE BOTTOM LEFT |
| | #4 | 23929899 | PIECE, POLE BOTTOM LEFT |
| A332 | #1 | 23929898 | PIECE, POLE BOTTOM RIGHT |
| | #2 | 23929900 | PIECE, POLE BOTTOM RIGHT |
| | #3 | 23929900 | PIECE, POLE BOTTOM RIGHT |
| | #4 | 23929900 | PIECE, POLE BOTTOM RIGHT |
| ⚠ A401 | #1 | 23530781 | COVER, BACK COVER |
| ⚠ | #3 | 23532525 | COVER, BACK COVER |
| ⚠ | #4 | 23532525 | COVER, BACK COVER |
| ⚠ A411 | #2 | 23532757 | COVER, BACK COVER |
| ⚠ A421 | | 23530812 | COVER, REAR BOARD |
| ⚠ A424 | | 23429059 | CABINET, BACK BOARD |
| A721 | #1 | 23943628 | PLYETHLENE COVERING |
| | #2 | 23943628 | PLYETHLENE COVERING |
| | #3 | 23943033 | PLYETHLENE COVERING |
| | #4 | 23943033 | PLYETHLENE COVERING |
| E918 | #1 | 23737008 | BOLT |
| | #2 | 23737007 | BOLT |
| | #3 | 23737007 | BOLT |
| | #4 | 23737007 | BOLT |
| E929 | | 23969684 | TAPE, GLASS CLOTH, W/ADHESIVE W=90 T=0.18 |
| E948 | #1 | 23737008 | BOLT |
| | #2 | 23737007 | BOLT |
| | #3 | 23737007 | BOLT |
| | #4 | 23737007 | BOLT |
| E959 | | 23969684 | TAPE, GLASS CLOTH, W/ADHESIVE W=90 T=0.18 |
| E978 | #1 | 23737008 | BOLT |
| | #2 | 23737007 | BOLT |
| | #3 | 23737007 | BOLT |
| | #4 | 23737007 | BOLT |
| E989 | | 23969684 | TAPE, GLASS CLOTH, W/ADHESIVE W=90 T=0.18 |
| K501 | #1 | 23311088 | SCREEN, 51KP LENTICULAR SHEET |
| | #2 | 23311128 | SCREEN, 57KQ LENTICULAR SHEET |
| | #3 | 23311131 | SCREEN, 65KQ LENTICULAR SHEET |
| | #4 | 23311131 | SCREEN, 65KQ LENTICULAR SHEET |
| K502 | #1 | 23311016 | SCREEN, 51KN FRESNEL SHEET SCREEN51KN-F |
| | #2 | 23311014 | SCREEN, 57KN FRESNEL SHEET SCREEN57KN-F |
| | #3 | 23311010 | SCREEN, 65KN FRESNEL SHEET SCREEN65KN-F |

| Location No. | Parts No. | Description |
|---|---|---|
| | #4 23311010 | SCREEN, 65KN FRESNEL SHEET SCREEN65KN-F |
| K503 | #1 23311065 | SCREEN, PROTECTOR 51KN SCR-PRO51KN |
| | #2 23311038 | SCREEN, PROTECTOR 57KN SCR-PRO57KN |
| | #3 23311962 | SCREEN, PROTECTOR 65KM SCR-PRO65KM |
| | #4 23311962 | SCREEN, PROTECTOR 65KM SCR-PRO65KM |
| K601 | #1 23405484 | MIRROR, 51WQG 993/720*550 T3 |
| | #2 23405409 | MIRROR, 57WL MIRROR57WL |
| | #3 23405415 | MIRROR, 65WL MIRROR65WL |
| | #4 23405415 | MIRROR, 65WL MIRROR65WL |

| Location No. | Parts No. | Description |
|---|---|---|

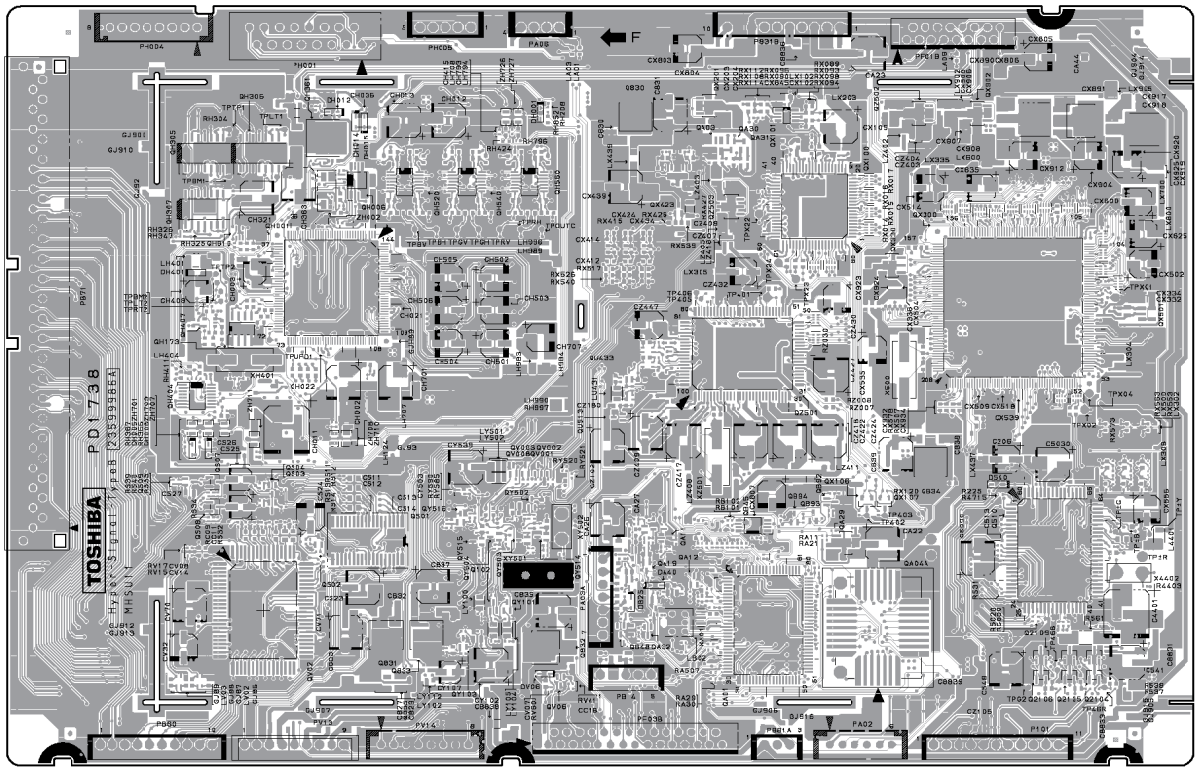
## SCAN CONVERTER MODUL, MHSU12 (U001)

BOTTOM (FOIL) SIDE



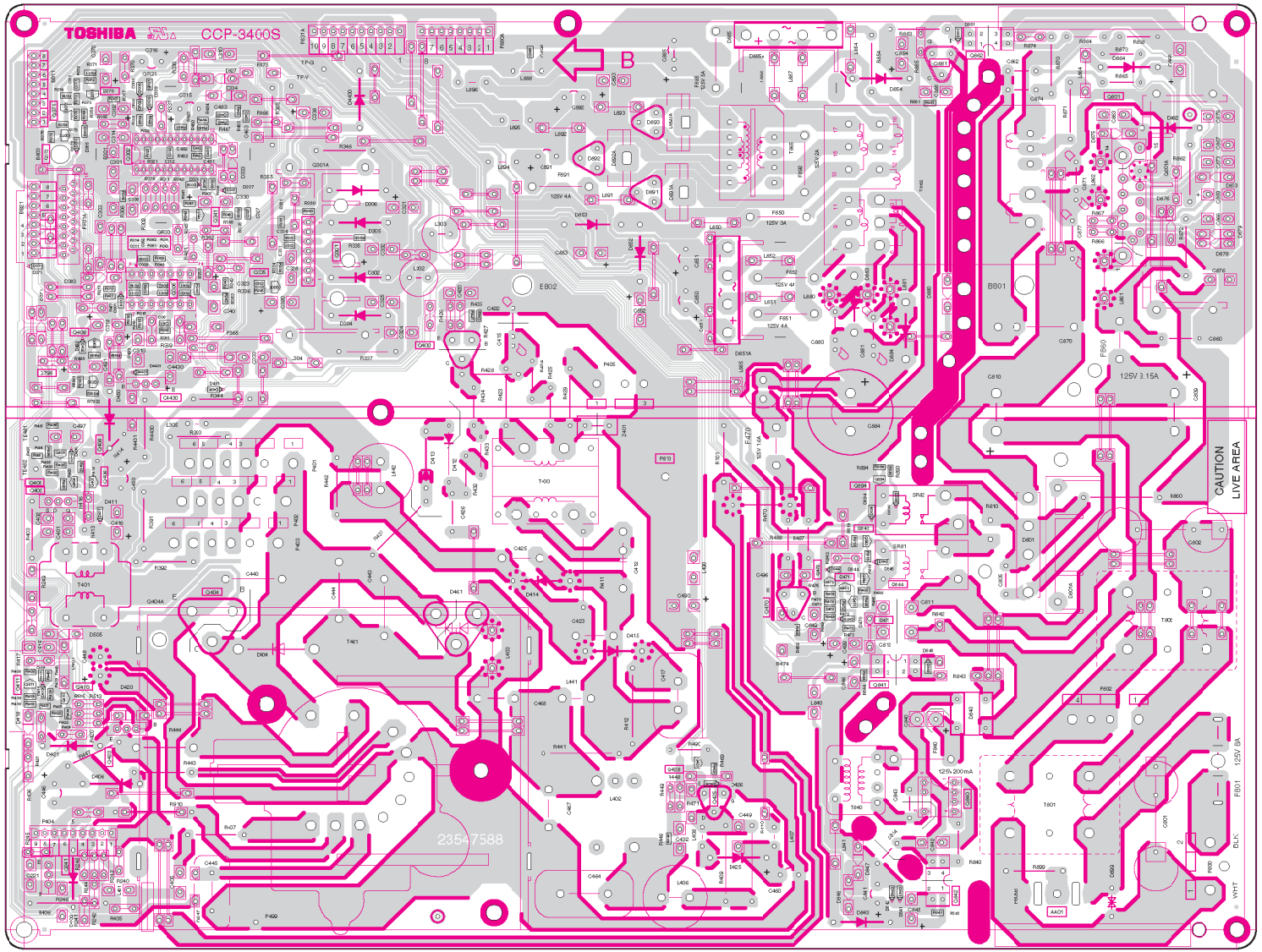
## SCAN CONVERTER MODUL, MHSU12 (U001)

TOP (COMPONENT) SIDE



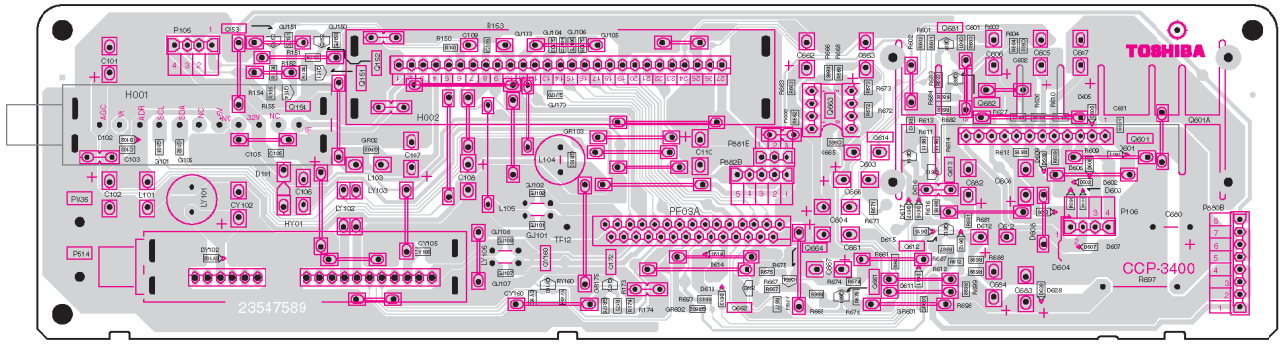
## DEFPOWER BOARD PD2201A (U401)

BOTTOM (FOIL) SIDE



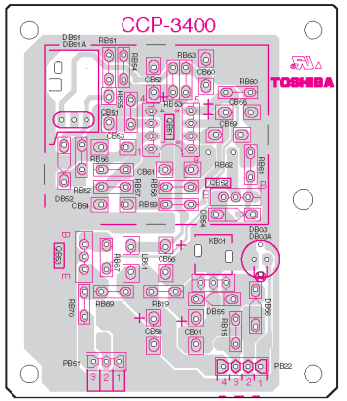
## IF/AUDIO BOARD PD1731D2 (U601)

BOTTOM (FOIL) SIDE



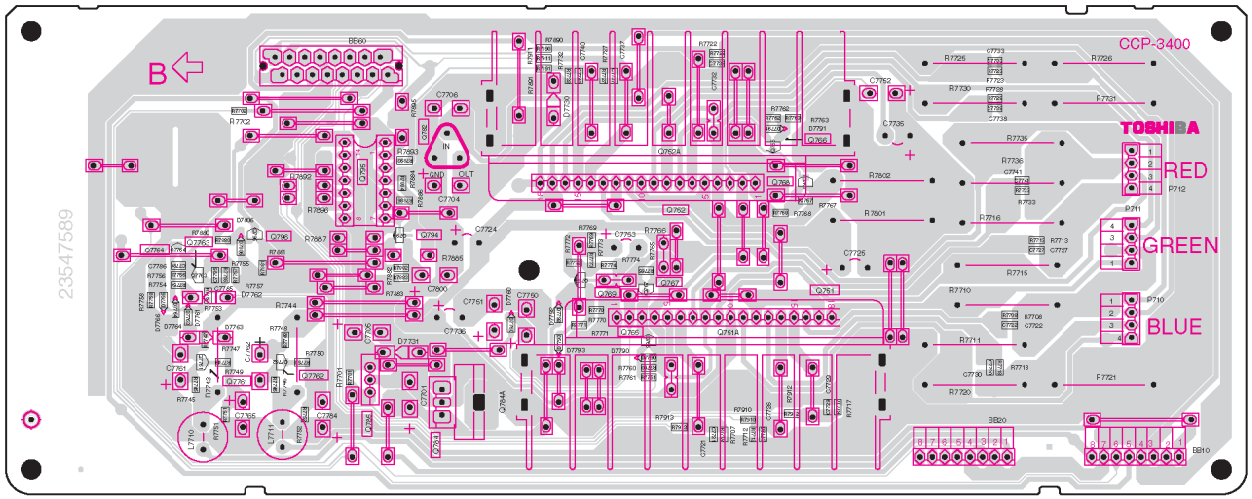

## IR BLASTER BOARD PD1289 (E045Z)

BOTTOM (FOIL) SIDE



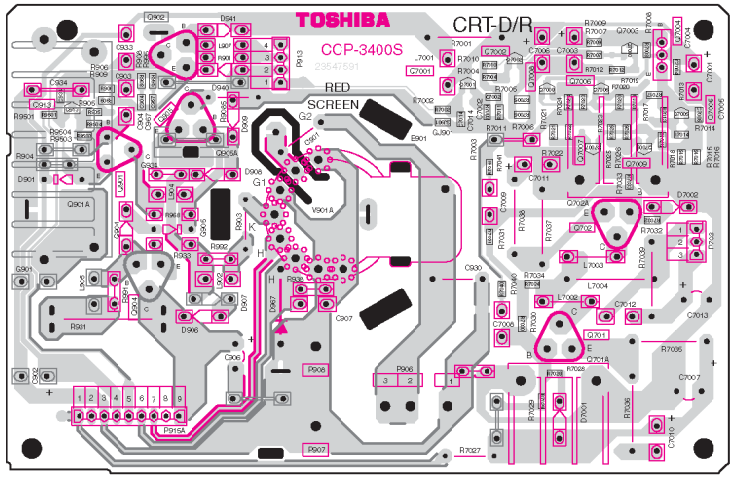

## CONVER BOARD PD1731D1 (U711)

BOTTOM (FOIL) SIDE



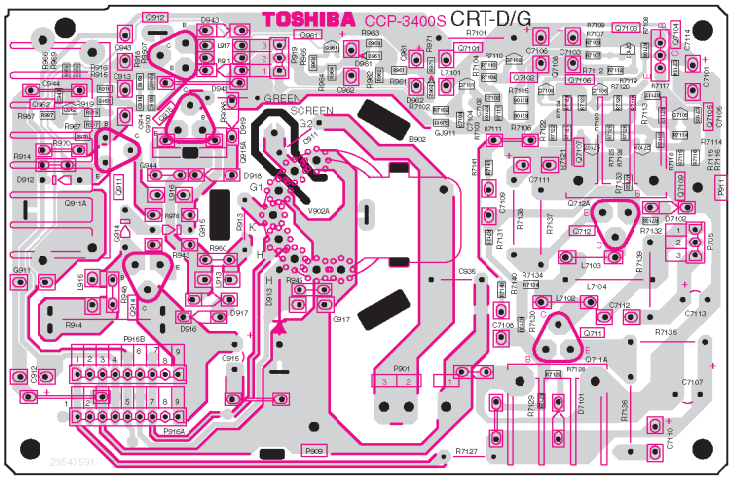
## CRT/SVM/R BOARD PD1733G1 (E031Z)

BOTTOM (FOIL) SIDE



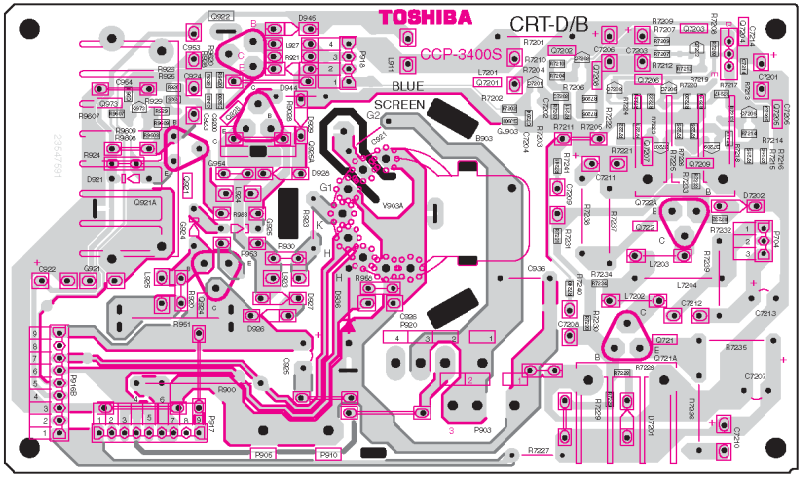

## CRT/SVM/G BOARD PD1733G2 (E032Z)

BOTTOM (FOIL) SIDE



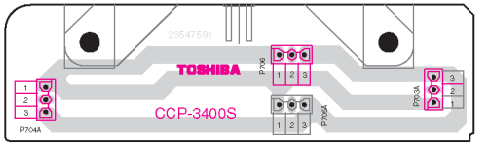

## CRT/SVM/B BOARD PD1733G3 (E033Z)

BOTTOM (FOIL) SIDE



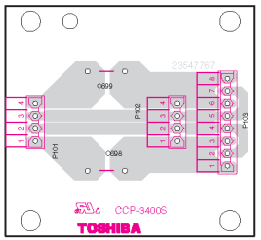

## SVM/DIV BOARD PD1733G4 (E034Z)

BOTTOM (FOIL) SIDE



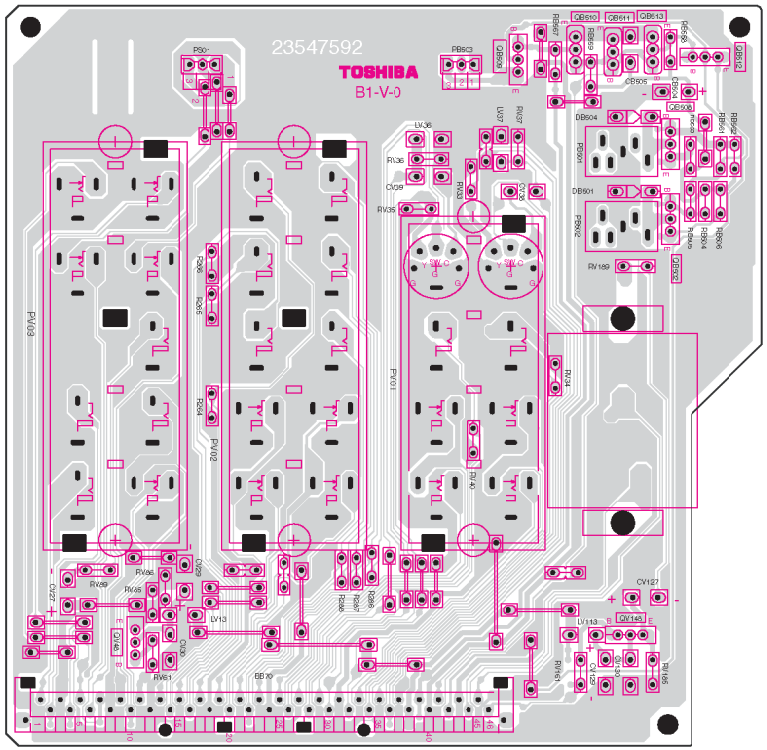

## SPK/CAPA BOARD PD2065B (US01)

BOTTOM (FOIL) SIDE



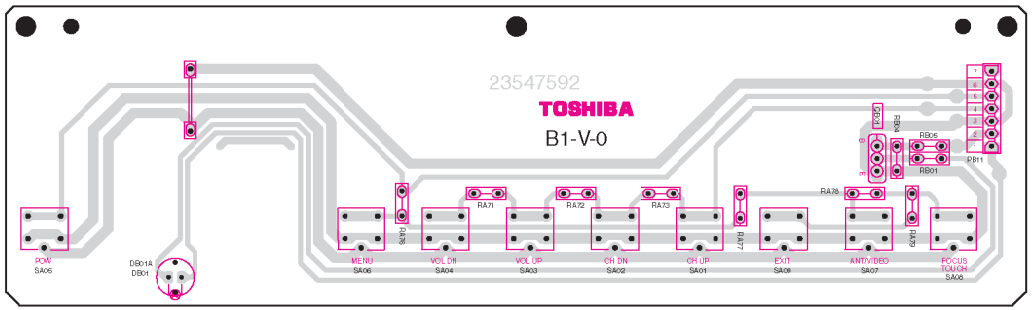
## BACK/AV BOARD PD1735E1 (E021Z)

BOTTOM (FOIL) SIDE



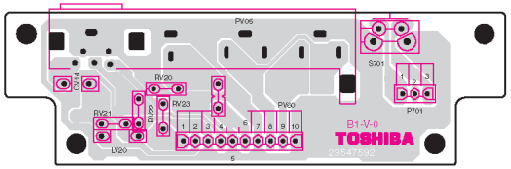

## FRONT-CON BOARD PD1735E2 (E022Z)

BOTTOM (FOIL) SIDE



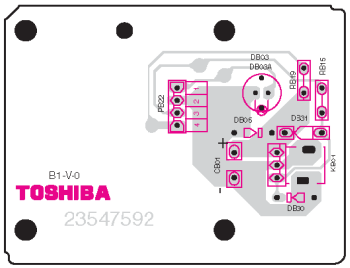

## FRONT IN BOARD PD1735E3 (E023Z)

BOTTOM (FOIL) SIDE



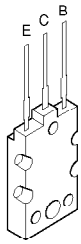

## REMOTE BOARD PD1735E4 (E024Z)

BOTTOM (FOIL) SIDE

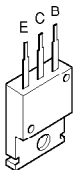


# TERMINAL VIEW OF TRANSISTORS

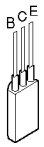
① 2SC5144
2SC5859



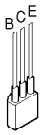

② 2SC3852
2SD1763A
2SC1569
2SC4544
2SA1788
2SA1306
2SA1186A



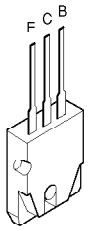

③ 2SC752GTM
2SC2482
2SC2655
2SC4721P



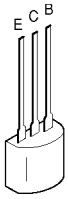

④ 2SC752
2SA562TM
2SA1015
2SC1815
2SC2878
2SC1740S
2SC2120
2SA9335



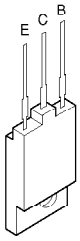

⑤ 2SA1788



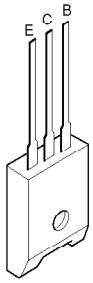

⑥ RN2203
RN2201
RN2004
RN1203
RN1204
RN2204
RN1205
RN1202
RN1201




⑦ 2SD1554
2SD2253
2SD1556
2SD2553
2SC5143




⑧ ON4409



# SCHEMATIC DIAGRAM

## MODEL : 51HC85/57HC85/65HC15/65HC85

**WARNING**: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON THE MANUAL FOR THIS MODEL.

**CAUTION**: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on the MANUAL for this model. Do not degrade the safety of the receiver through improper servicing.

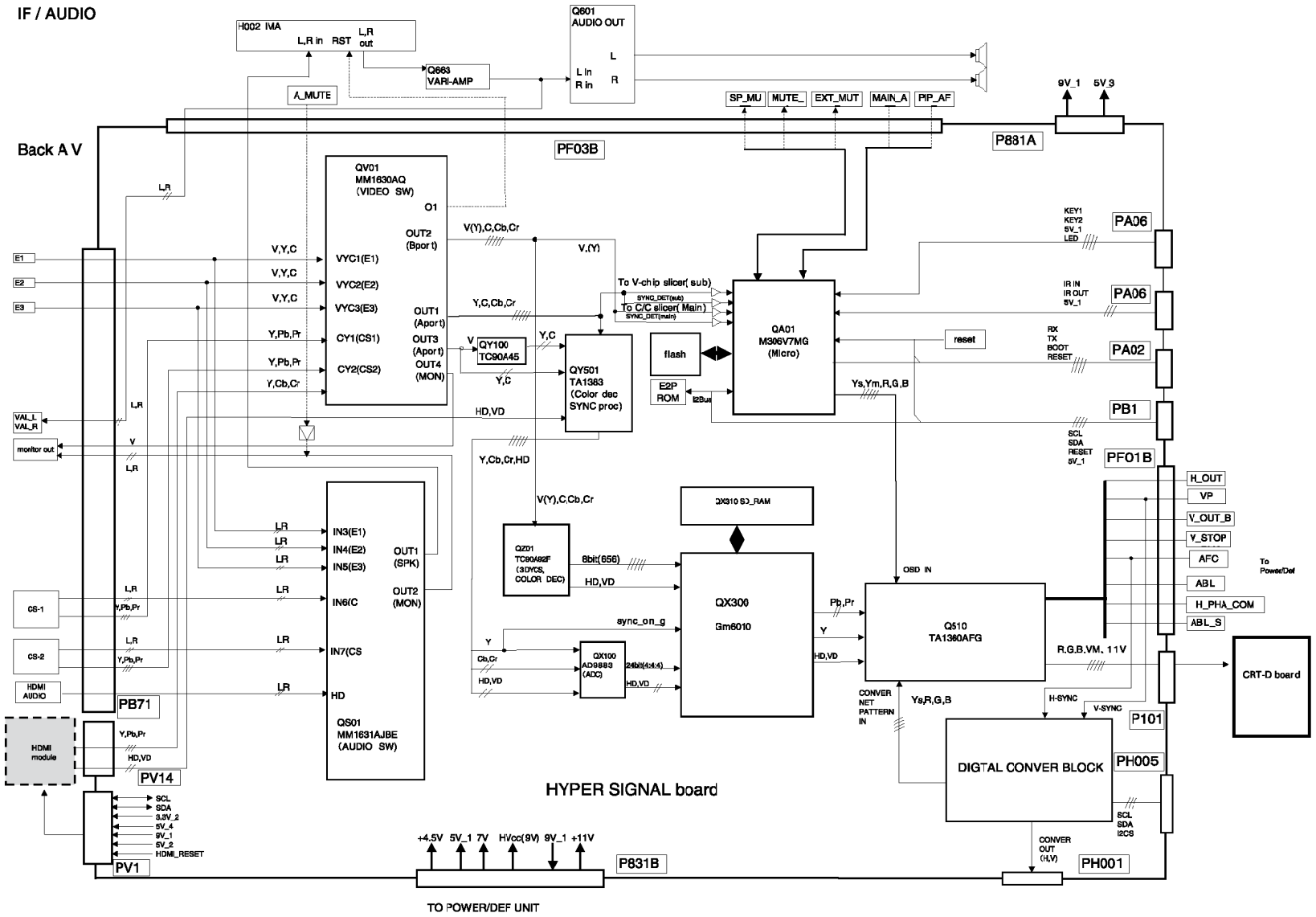
**NOTE:**

1. RESISTOR — Resistance is shown in ohm [K = 1.000, M = 1.000.000]. All resistors are 1/6W and 5% tolerance carbon resistor, unless otherwise noted as the following marks.
   1/2R = Metal or Metal oxide of 1/2 watt
   1/2S = Carbon compsistion of 1/2 watt
   1RF = Fuse resistor of 1 watt
   10W = Cement of 10 watt
   K = ±10%  G = ±2%  F = ±1%
2. CAPACITOR — Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in F, and the values more than 1 in pF.
   All capacitors are ceramic 50V, unless otherwise noted as the following marks.
   Electolytic capacitor
   Mylar capacitor
3. The parts indicated with "⚠" have special characteristics, and should be replaced with identical parts only.
4. Voltages read with DIGITAL MULTI-METER from point indicated to chassing ground, using a color bar signal with all controls at normal, line voltage at 220 volts.
5. Waveforms are taken receiving color bar signal with enough sensitivity.
6. Voltage reading shown are nominal values and may vary ±20% except H.V.

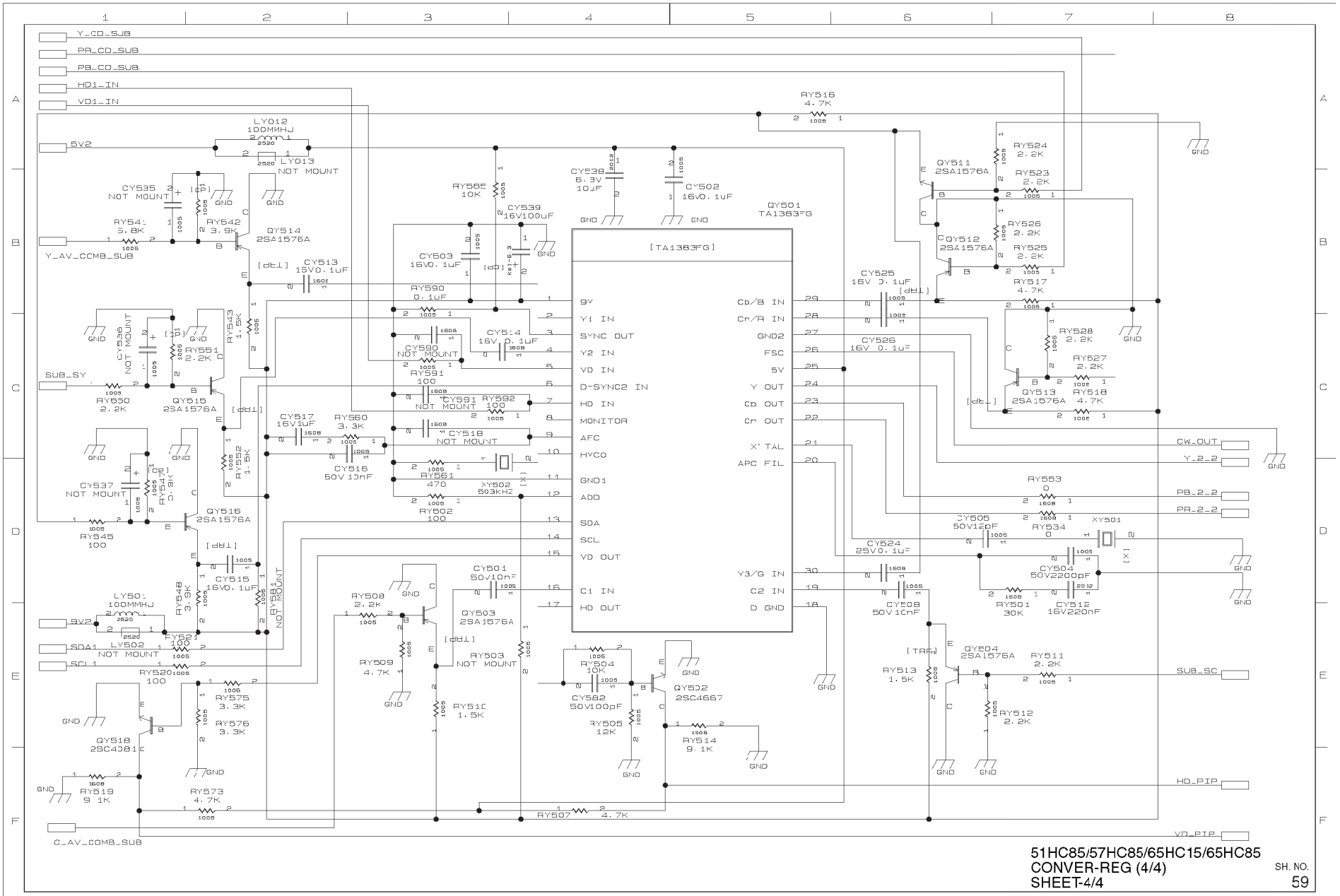
## ■ SCHEMATIC DIAGRAM STRUCTURE:


- SPK CONNECTOR Circuit ..... 1/62
- DEF POWER Circuit
  - (1/3) [SHEET - 1/3] ..... 2/62
  - (2/3) [SHEET - 2/3] ..... 3/62
  - (3/3) [SHEET - 3/3] ..... 4/62
- BACK/AV Circuit ..... 5/62
- CONV/IF/AUDIO
  - (1/3) [SHEET - 1/3] ..... 6/62
  - (2/3) [SHEET - 2/3] ..... 7/62
  - (3/3) [SHEET - 3/3] ..... 8/62
- CONVER OUT Circuit ..... 9/62
- FRONT IN/CONT Circuit ..... 10/62
- IR BLASTER Circuit ..... 11/62
- CRT-D Circuit
  - (1/2) [SHEET - 1/2] ..... 12/62
  - (2/2) [SHEET - 2/2] ..... 13/62
- AV Circuit
  - (1/10) [SHEET - 1/10] ..... 14/62
  - (2/10) [SHEET - 2/10] ..... 15/62
  - (3/10) [SHEET - 3/10] ..... 16/62
  - (4/10) [SHEET - 4/10] ..... 17/62
  - (5/10) [SHEET - 5/10] ..... 18/62
  - (6/10) [SHEET - 6/10] ..... 19/62
  - (7/10) [SHEET - 7/10] ..... 20/62
  - (8/10) [SHEET - 8/10] ..... 21/62
  - (9/10) [SHEET - 9/10] ..... 22/62
  - (10/10) [SHEET - 10/10] ..... 23/62
- MICOM Circuit
  - HYPER SIGNAL
    - (1/10) [ SHEET - 1/10] ..... 24/62
    - (2/10) [SHEET - 2/10] ..... 25/62
    - (3/10) [SHEET - 3/10] ..... 26/62
    - (4/10) [SHEET - 4/10] ..... 27/62
    - (5/10) [SHEET - 5/10] ..... 28/62
    - (6/10) [SHEET - 6/10] ..... 29/62
    - (7/10) [SHEET - 7/10] ..... 30/62
    - (8/10) [SHEET - 8/10] ..... 31/62
    - (9/10) [SHEET - 9/10] ..... 32/62
    - (10/10) [SHEET - 10/10] ..... 33/62
  - G-HYPER Circuit
    - (1/3) [SHEET - 1/3] ..... 34/62
    - (2/3) [SHEET - 2/3] ..... 35/62
    - (3/3) [SHEET - 3/3] ..... 36/62
  - AD-CONVERTER Circuit
    - (A) [ SHEET - 1/3] ..... 37/62
    - (B) [SHEET - 2/3] ..... 38/62
    - (C) [SHEET - 3/3] ..... 39/62
  - GC-TC90A92A Circuit
    - (1/3) [ SHEET - 1/3] ..... 40/62
    - (2/3) [SHEET - 2/3] ..... 41/62
    - (3/3) [SHEET - 3/3] ..... 42/62
  - GC-REG Circuit ..... 43/62
  - GNESIS Circuit
    - (1/3) [SHEET - 1/3] ..... 44/62
    - (2/3) [SHEET - 2/3] ..... 45/62
    - (3/3) [SHEET - 3/3] ..... 46/62
  - SDRAM Circuit ..... 47/62
  - GNESIS OUT Circuit ..... 48/62
  - GNESIS REG Circuit ..... 49/62
  - CPU Circuit ..... 50/62
  - DIGITAL CONVER Circuit
    - (1/8) [SHEET - 1/8] ..... 51/62
    - (2/8) [SHEET - 2/8] ..... 52/62
    - (3/8) [SHEET - 3/8] ..... 53/62
    - (4/8) [SHEET - 4/8] ..... 54/62
    - (5/8) [SHEET - 5/8] ..... 55/62
    - (6/8) [SHEET - 6/8] ..... 56/62
    - (7/8) [SHEET - 7/8] ..... 57/62
    - (8/8) [SHEET - 8/8] ..... 58/62
  - CONVER-REG Circuit
    - (1/4) [SHEET - 1/4] ..... 59/62
    - (2/4) [SHEET - 2/4] ..... 60/62
    - (3/4) [SHEET - 3/4] ..... 61/62
    - (4/4) [SHEET - 4/4] ..... 62/62

# CIRCUIT BLOCK DIAGRAM



TOSHIBA CORPORATION
1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN


Y_CD_SUB
PR_CD_SUB
PB_CD_SUB
HD1_IN
VD1_IN
5V2
Y_AV_COMB_SUB
SUB_SY
SDA1
SCL1
9V2
C_AV_COMB_SUB
QY501
TA1383FG
[TA1383FG]
9V
Y1 IN
SYNC OUT
Y2 IN
VD IN
D-SYNC2 IN
HD IN
MONITOR
AFC
HVCO
GND1
ADD
SDA
SCL
VD OUT
C1 IN
HD OUT
Cb/B IN
Cr/R IN
GND2
FSC
5V
Y OUT
Cb OUT
Cr OUT
X'TAL
APC FIL
Y3/G IN
C2 IN
D GND
CW_OUT
Y_2_2
PB_2_2
PR_2_2
SUB_SC
HD_PIP
VD_PIP
51HC85/57HC85/65HC15/65HC85
CONVER-REG (4/4)
SHEET-4/4
SH. NO.
59

# SCHEMATIC DIAGRAM

## MODEL : 51HC85/57HC85/65HC15/65HC85

**WARNING**: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON THE MANUAL FOR THIS MODEL.

**CAUTION**: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on the MANUAL for this model. Do not degrade the safety of the receiver through improper servicing.

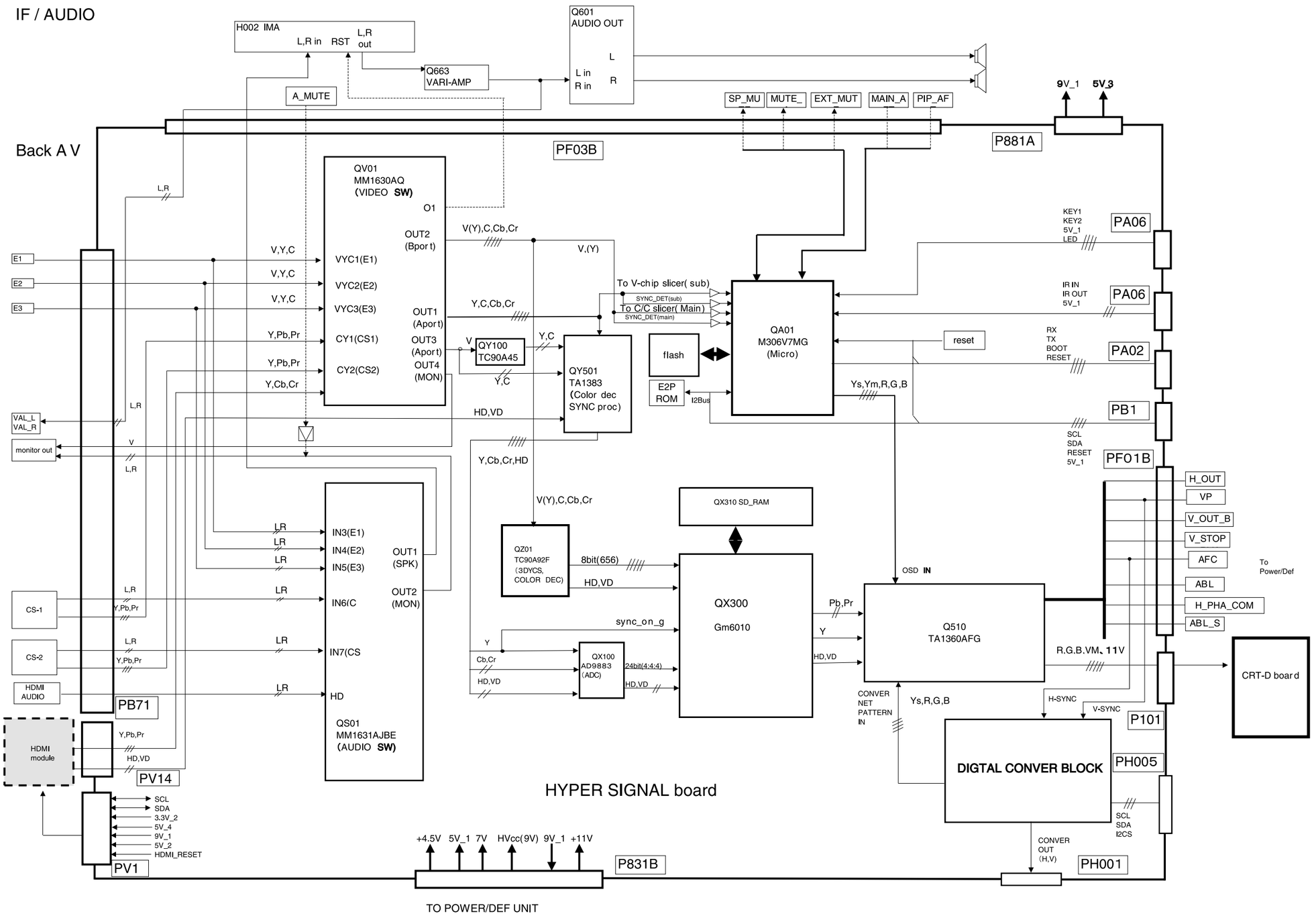
**NOTE:**

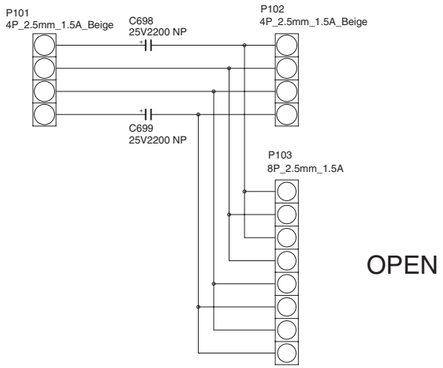
1. RESISTOR — Resistance is shown in ohm [K = 1.000, M = 1.000.000]. All resistors are 1/6W and 5% tolerance carbon resistor, unless otherwise noted as the following marks.
   1/2R = Metal or Metal oxide of 1/2 watt
   1/2S = Carbon compsistion of 1/2 watt
   1RF = Fuse resistor of 1 watt
   10W = Cement of 10 watt
   K = ±10%  G = ±2%  F = ±1%
2. CAPACITOR — Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in F, and the values more than 1 in pF.
   All capacitors are ceramic 50V, unless otherwise noted as the following marks.
   Electolytic capacitor
   Mylar capacitor
3. The parts indicated with "⚠" have special characteristics, and should be replaced with identical parts only.
4. Voltages read with DIGITAL MULTI-METER from point indicated to chassing ground, using a color bar signal with all controls at normal, line voltage at 220 volts.
5. Waveforms are taken receiving color bar signal with enough sensitivity.
6. Voltage reading shown are nominal values and may vary ±20% except H.V.

## ■ SCHEMATIC DIAGRAM STRUCTURE:


- SPK CONNECTOR Circuit ..... 1/62
- DEF POWER Circuit
  - (1/3) [SHEET - 1/3] ..... 2/62
  - (2/3) [SHEET - 2/3] ..... 3/62
  - (3/3) [SHEET - 3/3] ..... 4/62
- BACK/AV Circuit ..... 5/62
- CONV/IF/AUDIO
  - (1/3) [SHEET - 1/3] ..... 6/62
  - (2/3) [SHEET - 2/3] ..... 7/62
  - (3/3) [SHEET - 3/3] ..... 8/62
- CONVER OUT Circuit ..... 9/62
- FRONT IN/CONT Circuit ..... 10/62
- IR BLASTER Circuit ..... 11/62
- CRT-D Circuit
  - (1/2) [SHEET - 1/2] ..... 12/62
  - (2/2) [SHEET - 2/2] ..... 13/62
- AV Circuit
  - (1/10) [SHEET - 1/10] ..... 14/62
  - (2/10) [SHEET - 2/10] ..... 15/62
  - (3/10) [SHEET - 3/10] ..... 16/62
  - (4/10) [SHEET - 4/10] ..... 17/62
  - (5/10) [SHEET - 5/10] ..... 18/62
  - (6/10) [SHEET - 6/10] ..... 19/62
  - (7/10) [SHEET - 7/10] ..... 20/62
  - (8/10) [SHEET - 8/10] ..... 21/62
  - (9/10) [SHEET - 9/10] ..... 22/62
  - (10/10) [SHEET - 10/10] ..... 23/62
- MICOM Circuit
  - HYPER SIGNAL
    - (1/10) [ SHEET - 1/10] ..... 24/62
    - (2/10) [SHEET - 2/10] ..... 25/62
    - (3/10) [SHEET - 3/10] ..... 26/62
    - (4/10) [SHEET - 4/10] ..... 27/62
    - (5/10) [SHEET - 5/10] ..... 28/62
    - (6/10) [SHEET - 6/10] ..... 29/62
    - (7/10) [SHEET - 7/10] ..... 30/62
    - (8/10) [SHEET - 8/10] ..... 31/62
    - (9/10) [SHEET - 9/10] ..... 32/62
    - (10/10) [SHEET - 10/10] ..... 33/62
  - G-HYPER Circuit
    - (1/3) [SHEET - 1/3] ..... 34/62
    - (2/3) [SHEET - 2/3] ..... 35/62
    - (3/3) [SHEET - 3/3] ..... 36/62
  - AD-CONVERTER Circuit
    - (A) [ SHEET - 1/3] ..... 37/62
    - (B) [SHEET - 2/3] ..... 38/62
    - (C) [SHEET - 3/3] ..... 39/62
  - GC-TC90A92A Circuit
    - (1/3) [ SHEET - 1/3] ..... 40/62
    - (2/3) [SHEET - 2/3] ..... 41/62
    - (3/3) [SHEET - 3/3] ..... 42/62
  - GC-REG Circuit ..... 43/62
  - GNESIS Circuit
    - (1/3) [SHEET - 1/3] ..... 44/62
    - (2/3) [SHEET - 2/3] ..... 45/62
    - (3/3) [SHEET - 3/3] ..... 46/62
  - SDRAM Circuit ..... 47/62
  - GNESIS OUT Circuit ..... 48/62
  - GNESIS REG Circuit ..... 49/62
  - CPU Circuit ..... 50/62
  - DIGITAL CONVER Circuit
    - (1/8) [SHEET - 1/8] ..... 51/62
    - (2/8) [SHEET - 2/8] ..... 52/62
    - (3/8) [SHEET - 3/8] ..... 53/62
    - (4/8) [SHEET - 4/8] ..... 54/62
    - (5/8) [SHEET - 5/8] ..... 55/62
    - (6/8) [SHEET - 6/8] ..... 56/62
    - (7/8) [SHEET - 7/8] ..... 57/62
    - (8/8) [SHEET - 8/8] ..... 58/62
  - CONVER-REG Circuit
    - (1/4) [SHEET - 1/4] ..... 59/62
    - (2/4) [SHEET - 2/4] ..... 60/62
    - (3/4) [SHEET - 3/4] ..... 61/62
    - (4/4) [SHEET - 4/4] ..... 62/62

# CIRCUIT BLOCK DIAGRAM






OPEN

51HC85/57HC85/65HC15/65HC85
SPK CONNECTOR

# DEF/POWER

TO HYPER/SIGNAL

P810A
WDE-BTW-N/A

| | | | |
|---|---|---|---|
| H_OUT | 1 | H_OUT | 2-E1 |
| H_OUT_GND | 2 | | |
| ABL_SW | 3 | ABL_SW | 2-C1 |
| AFC | 4 | AFC | 2-D1 |
| ABL | 5 | ABL | 2-C1 |
| GND | 6 | | |
| H_CONV | 7 | H_CONV | 2-E1 |
| ACP | 8 | ACP | 3-E7 |
| POWER | 9 | POWER | 3-E7 |
| BLK_UP | 10 | | |
| H_PHA_COM | 11 | H_PHA_COM | 2-B1 |
| GND | 12 | | |
| SDA1 | 13 | SDA1 | 2-B8 |
| SCL1 | 14 | SCL1 | 2-B8 |
| V_STOP_BLK | 15 | V_STOP_BLK | 2-C1 |
| VP_Q510 | 16 | VP_Q510 | 2-A1 |

P802A
10P_2.0mm_1.5A_Beige

| | | | |
|---|---|---|---|
| +4.5V | 1 | 4.5V | 3-A7 |
| GND | 2 | | |
| +5V-1 | 3 | 5V1 | 3-E7 |
| GND | 4 | | |
| +7V | 5 | 7V | 3-A7 |
| GND | 6 | | |
| H.Vcc | 7 | HVCC | 2-D1 |
| +9V-1 | 8 | 9V1 | 2-C1 |
| GND | 9 | | |
| +11V | 10 | 11V | 3-B7 |

P800
Lock-2P_11.88mm_S

P801
POWER CORD
CHCHA0120272036
or VM0094Q0370184

3-F1 AC_L1
3-F1 AC_N

TO SUB POWER

3-E1 AC_L2
NC
NC
3-D1 AC_N2

P802
CHCN

2-D8 DF_V
NC
GND
3-C7 GND

P405
B03B-DVS-L

TO FOCUS PACK

2-D8 H_OUT
2-D8 H_REF
2-C8 V_IN
2-B8 V_OUT

P403
6P_5mm_5A

L464
TDY707AS(R)

2-B8 V_OUT

P402
6P_5mm_5A

L463
TDY707AS(R)

2-B8 V_OUT

P401
6P_5mm_5A

L462
TDY707AS(R)

3-C7 GND

P810
1P

3-C7 +120V
2-C8 4V_DET
2-C8 HEATER
2-C8 200V

P404
9P_2.5mm_1.5A_Beige

TO CRT DRIVE

TO SVM

3-B7 11V → +11V
2-C1 CONV_ABL → GND, CONV_ABL
2-E1 H_CONV → GND, H_CONV
2-D1 AFC → AFC
2-C1 V_DF1 → V_DF
2-B1 V_BLK → V_BLK

BB21
BP 2.5P-J-P

TO CONVER

3-B7 -21V → CONVER-21V
2-B7 -16V2 → GND, -16V
2-B7 16V2 → GND, +16V
3-C7 PROTECT → PROTECT
3-B7 21V → GND, CONVER+21V

BB11
BP 2.5P-J-P

3-C7 32V → TUNER32V
3-C7 AVCC → Audio Vcc, Audio Vcc, Audio Vcc
3-C7 AGND → Audio GND, Audio GND, Audio GND
3-B7 11V → +11V

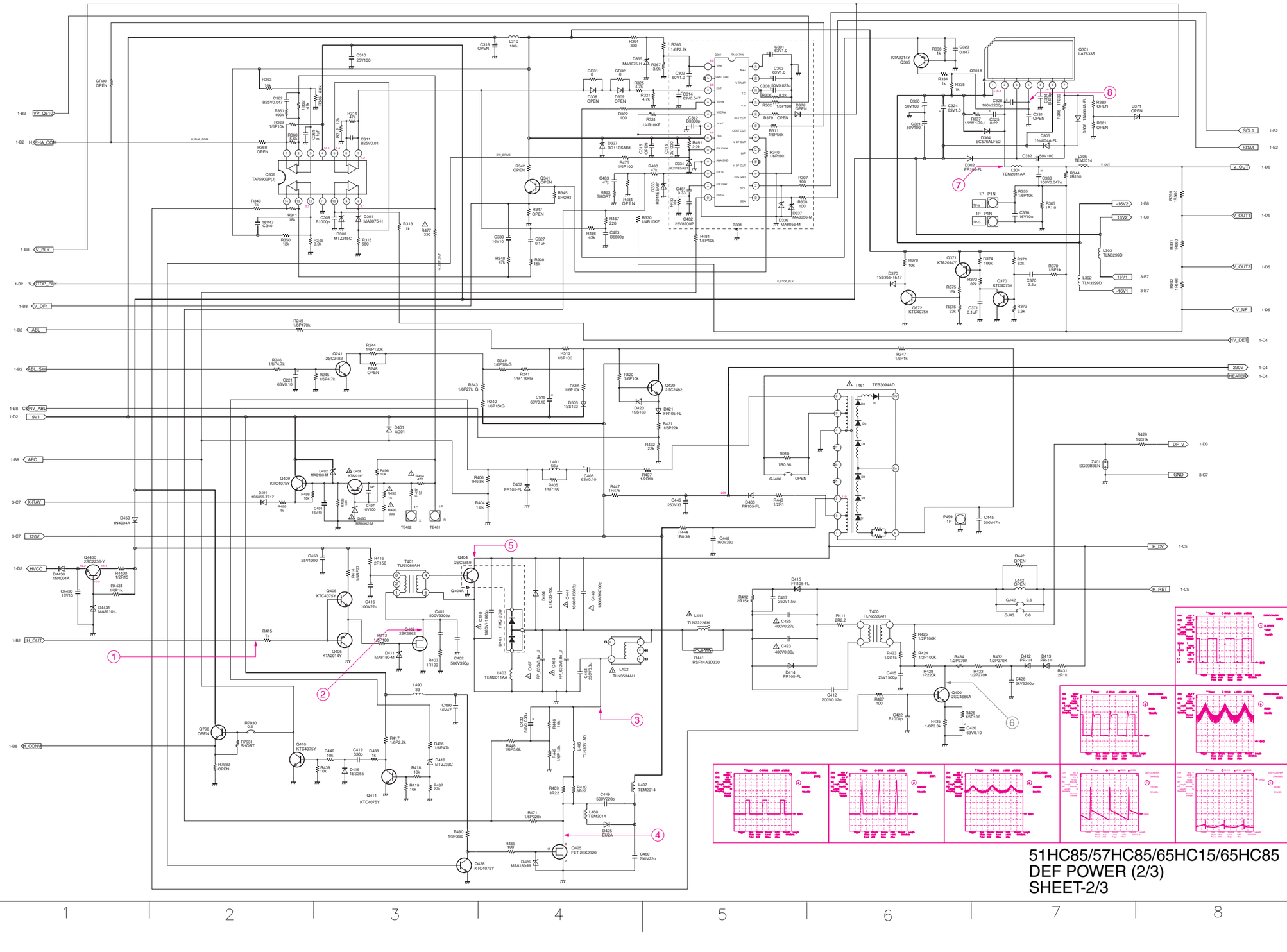
P880A
BP_2.5mm_1.5A_Beige

TO IF/AUDIO

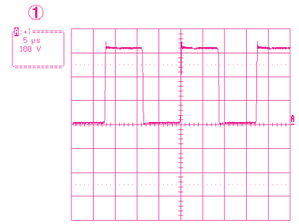
3-F2 TGND → TUNER GND

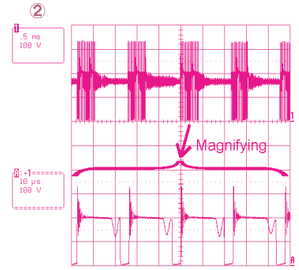
P805B
1P

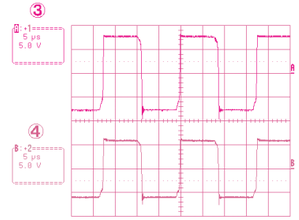
51HC85/57HC85/65HC15/65HC85
DEF POWER (1/3)
SHEET-1/3

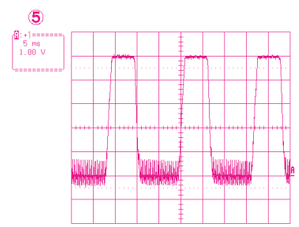

VP_QS10
H_PHA_COM
V_BLK
V_STOP_BLK
V_DIF1
ABL
ABL_SW
9V1
AFC
X-RAY
120V
HVCC
H_OUT
H_CONV
SCL1
SDA1
V_OUT
V_OUT1
V_OUT2
V_NF
INV_DET
220V
HEATER
DF_V
GND
H_DY
H_RET
-16V2
16V2
16V1
-16V1
TFB3094AD
TLN2222AH
TLN3534AH
TLN3299ID
TEM2011AA
TEM2014
TEM2011AA
TLN3391AD
TLN1086AH
TLN2222AH
FET 2SK2920
FET 2SK2962
TA1267AN
KTA2014Y
KTC4075Y
KTA2014Y
KTC4075Y
KTC4075Y
KTC4075Y
KTC4075Y
KTC4075Y
KTA2014Y
KTA2014Y
2SC5859
2SC2482
2SC2482
2SC2482
2SC2482
2SC2482
2SC4686A
2SC2236-Y
2SC2482
2SC2482
2SC2482
2SC2482
2SC2482

LIVE AREA

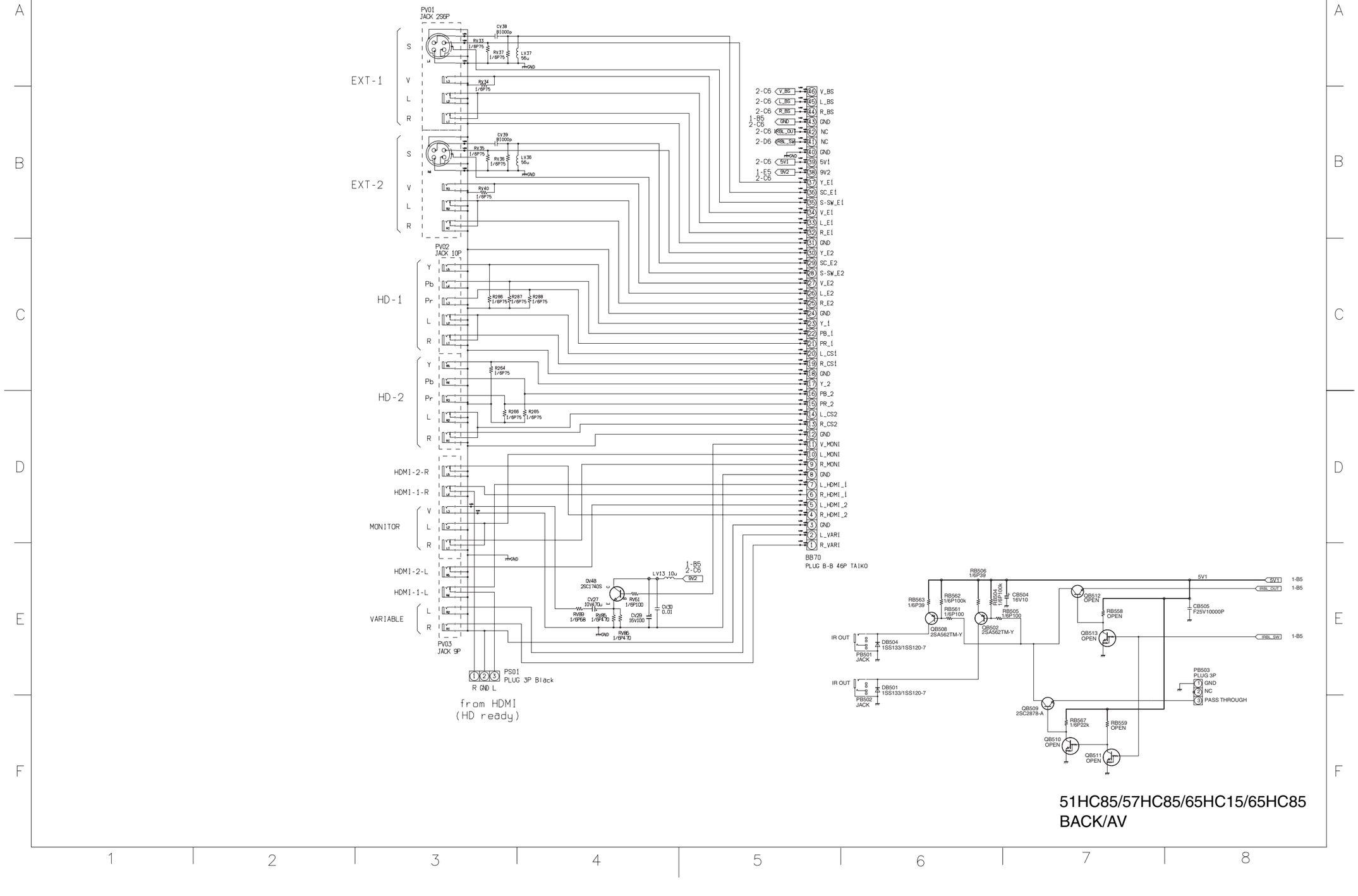


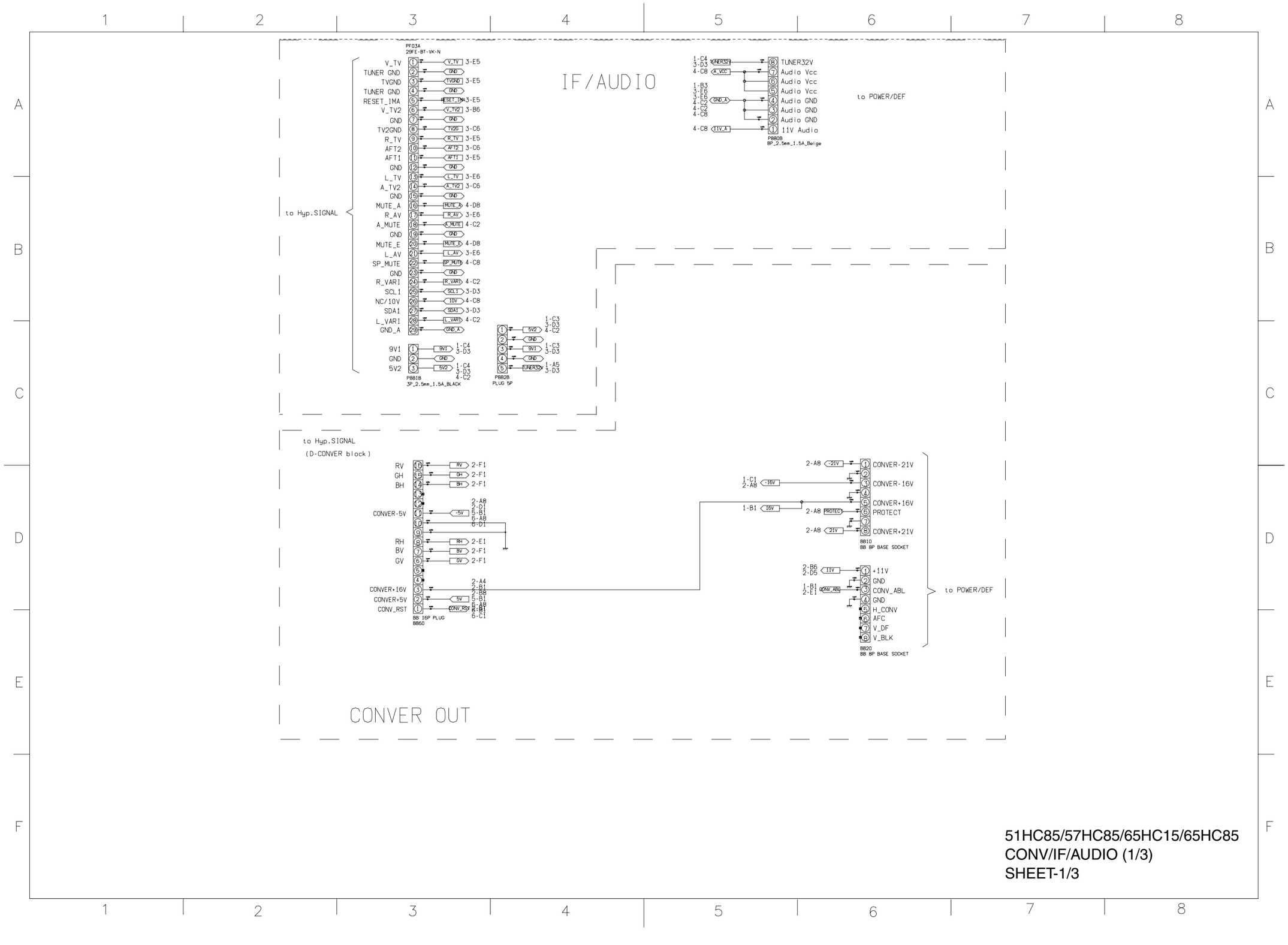



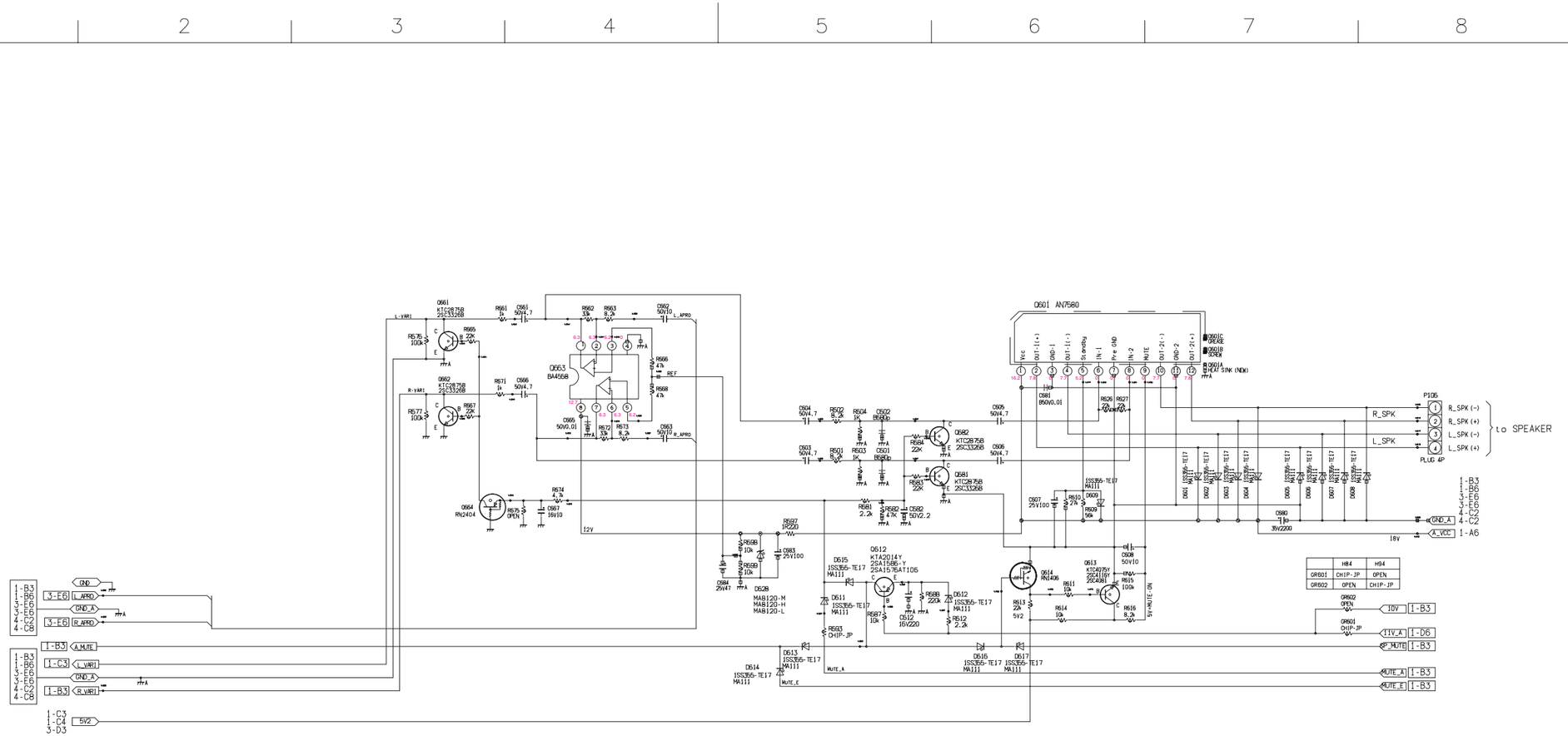

51HC85/57HC85/65HC15/65HC85
DEF POWER (3/3)
SHEET-3/3




51HC85/57HC85/65HC15/65HC85
BACK/AV

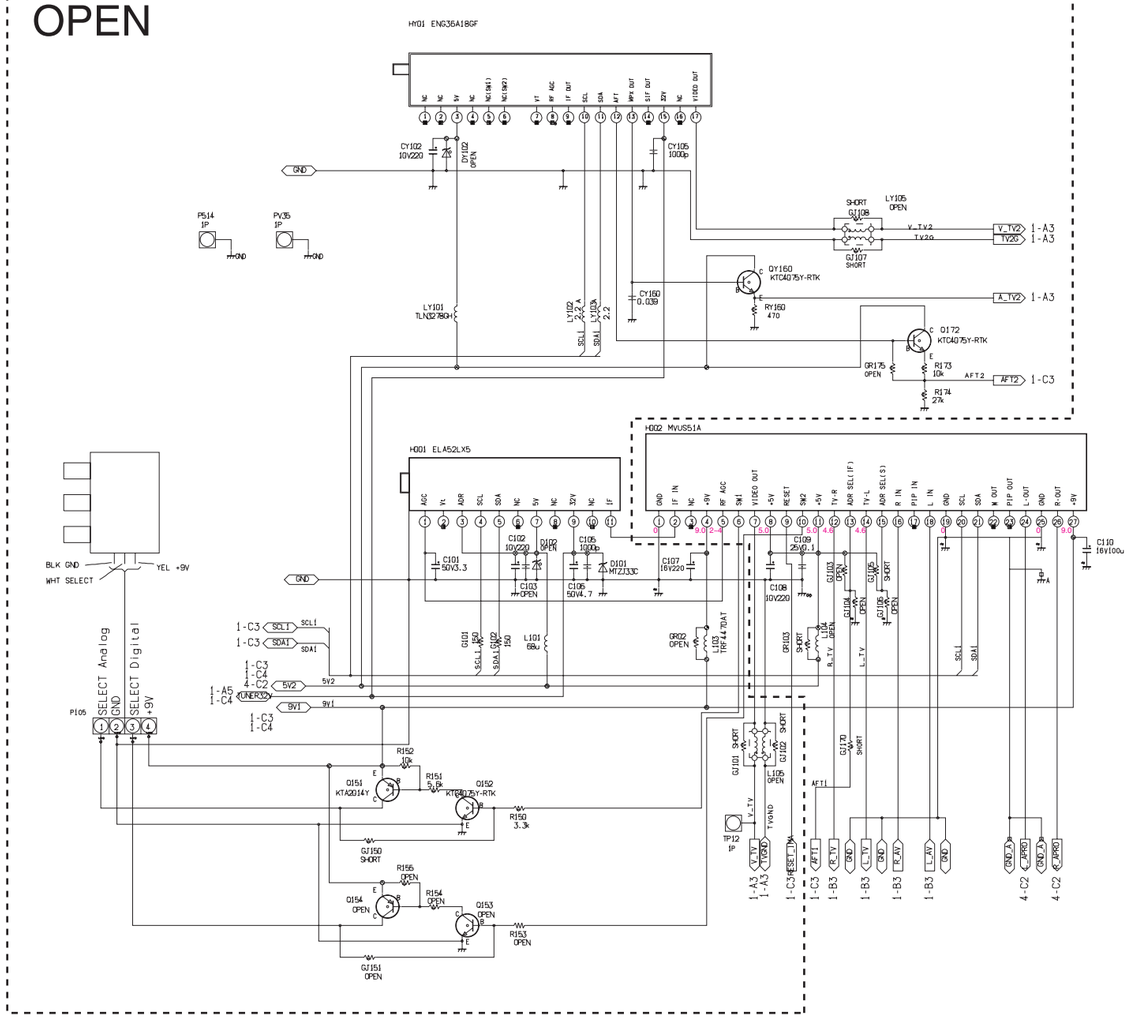



51HC85/57HC85/65HC15/65HC85
CONV/IF/AUDIO (1/3)
SHEET-1/3

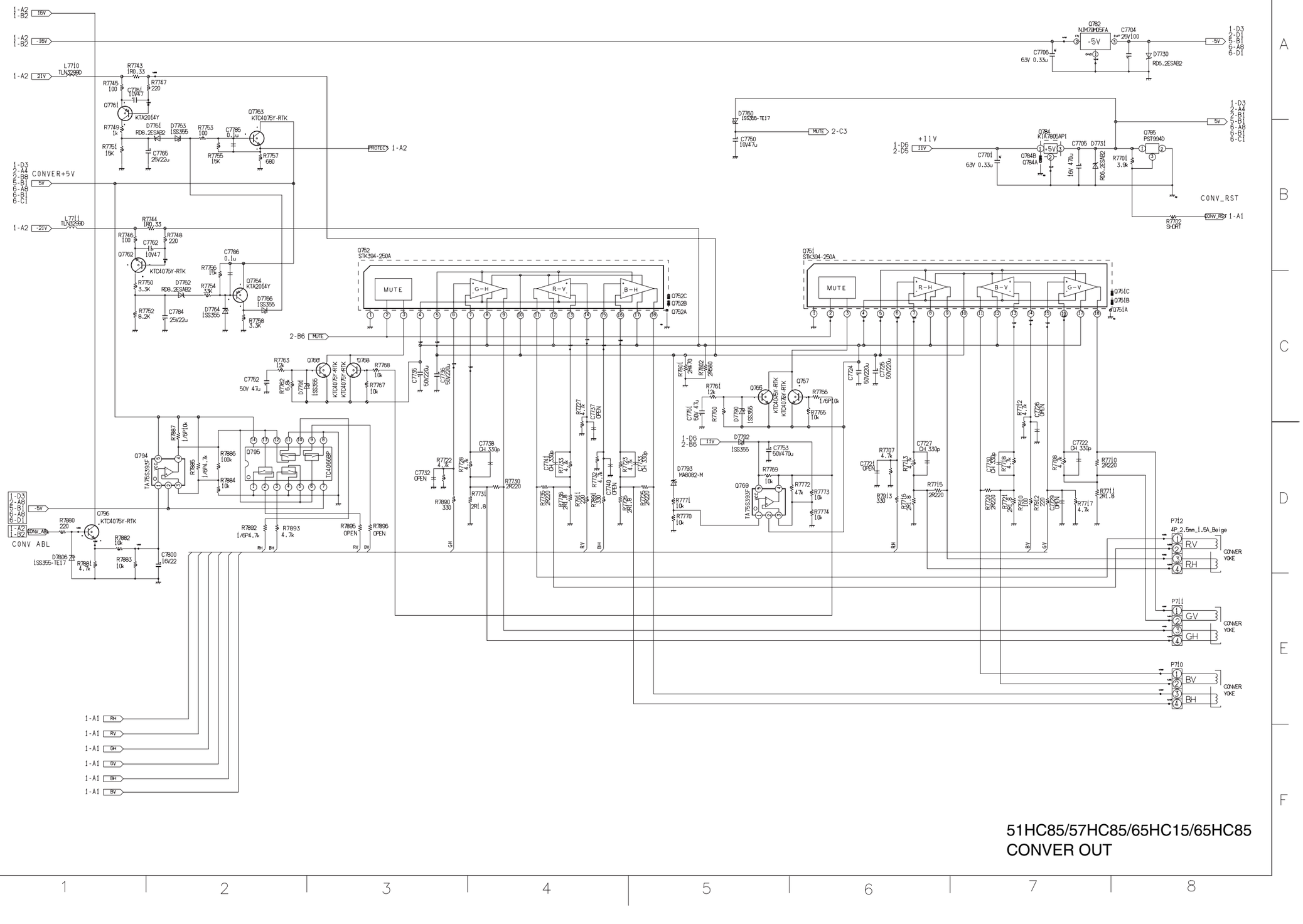



51HC85/57HC85/65HC15/65HC85
CONV/IF/AUDIO (2/3)
SHEET-2/3

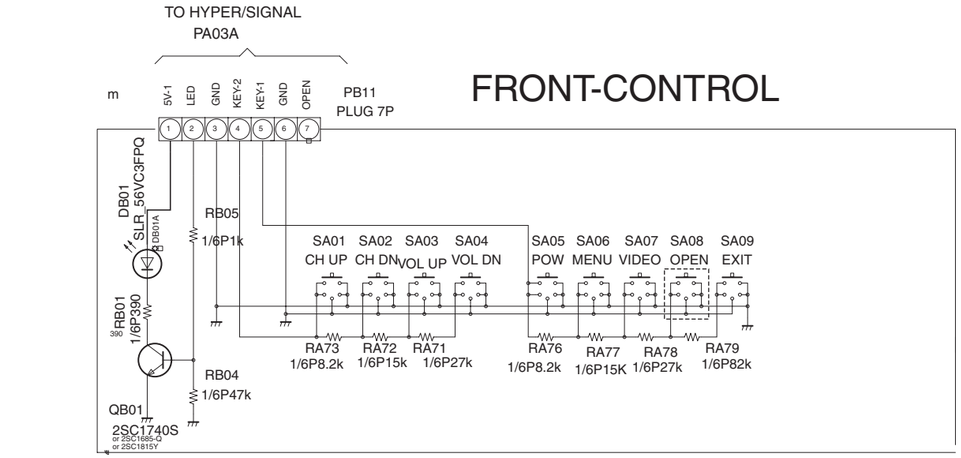
OPEN

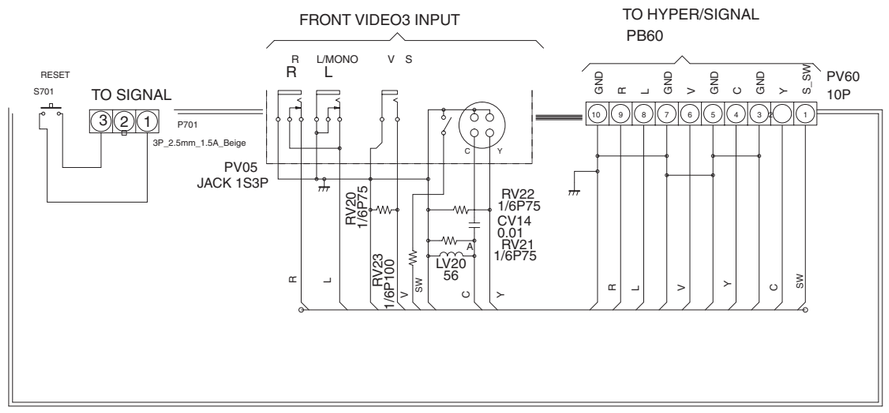



51HC85/57HC85/65HC15/65HC85
CONV/IF/AUDIO (3/3)
SHEET-3/3


CONVER+5V
CONV ABL
CONV_RST
MUTE
Q752 STK394-250A
Q751 STK394-250A
G-H
R-V
B-H
G-V
B-V
P712 4P_2.5mm_1.5A_Beige
P711
P710
RV
RH
GV
GH
BV
BH
CONVER YOKE
51HC85/57HC85/65HC15/65HC85
CONVER OUT

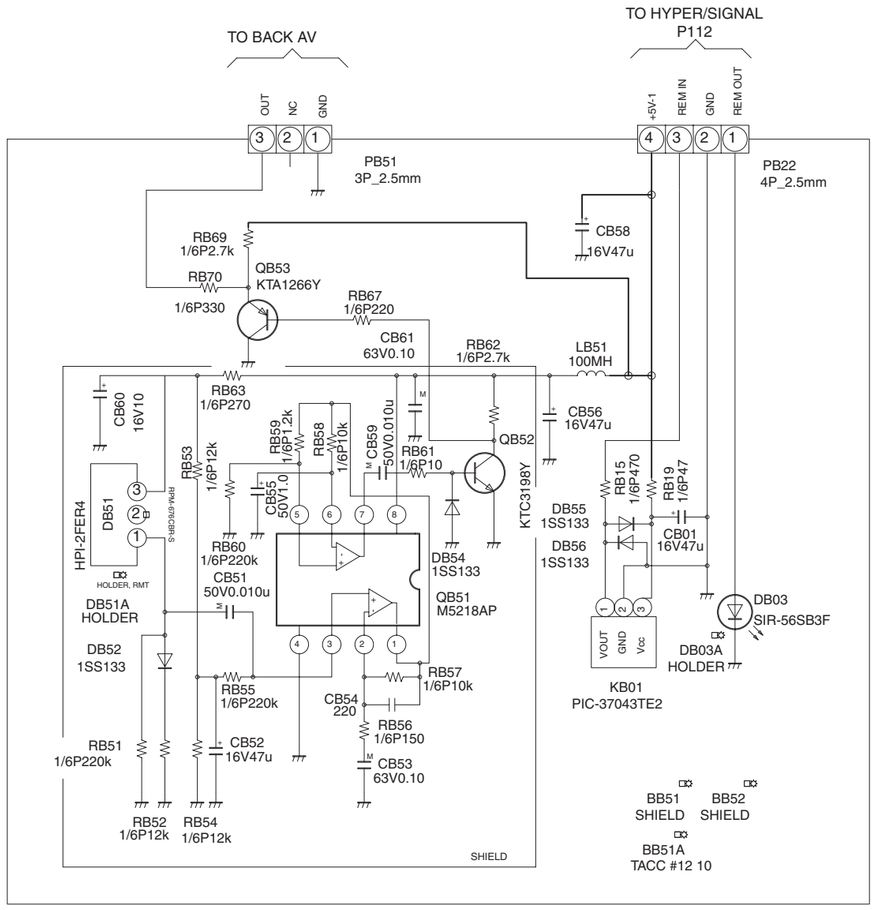
# FRONT-CONTROL



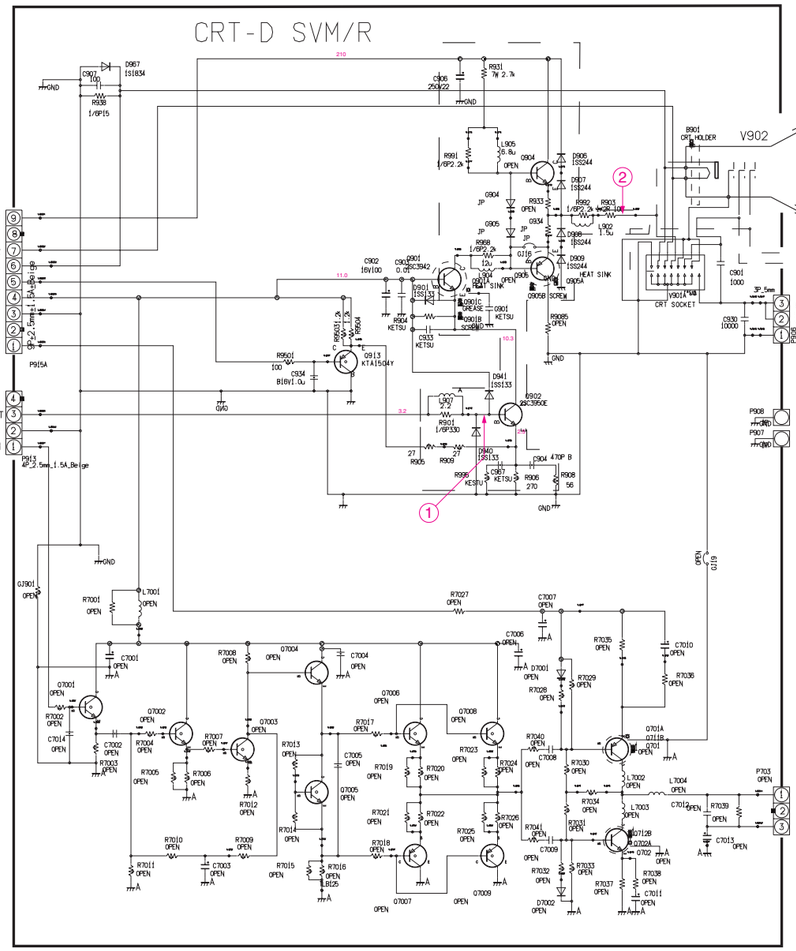



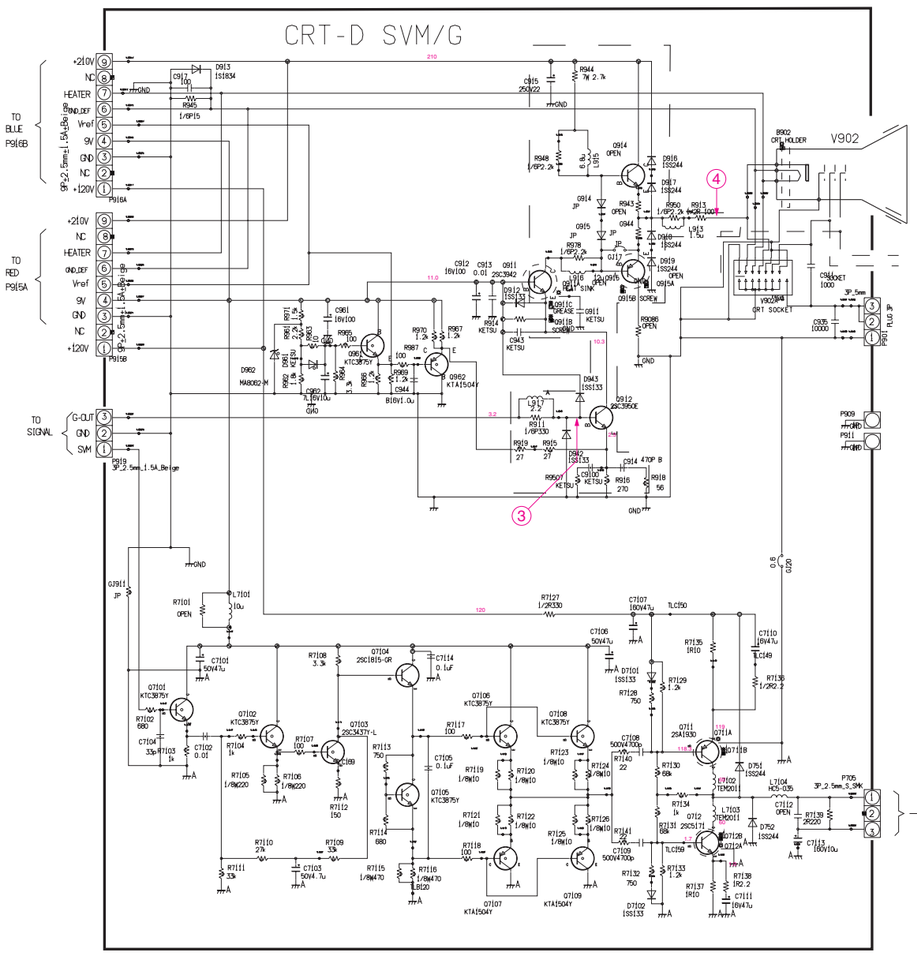

# FRONT-IN

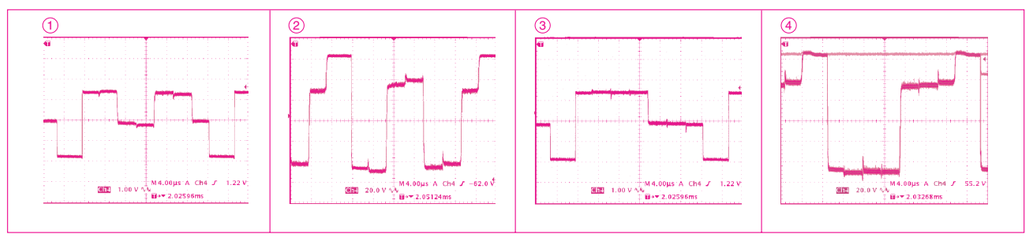
51HC85/57HC85/65HC15/65HC85
FRONT IN/CONT




51HC85/57HC85/65HC15/65HC85
IR BLASTER

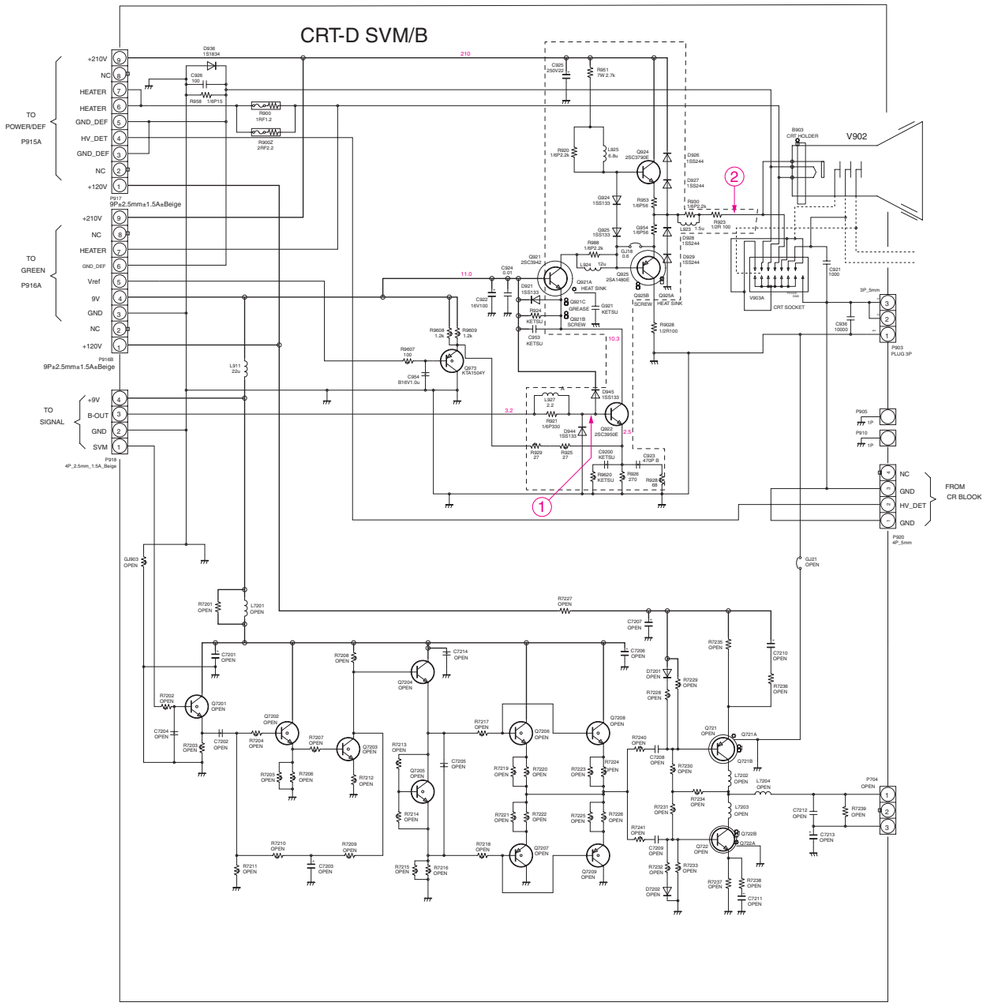


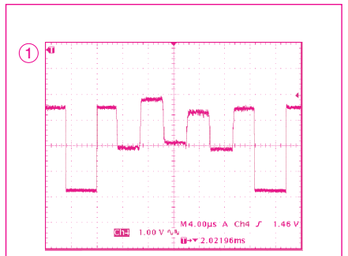



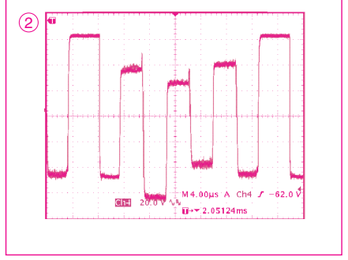



51HC85/57HC85/65HC15/65HC85
CRT-D (1/2)
SHEET-1/2

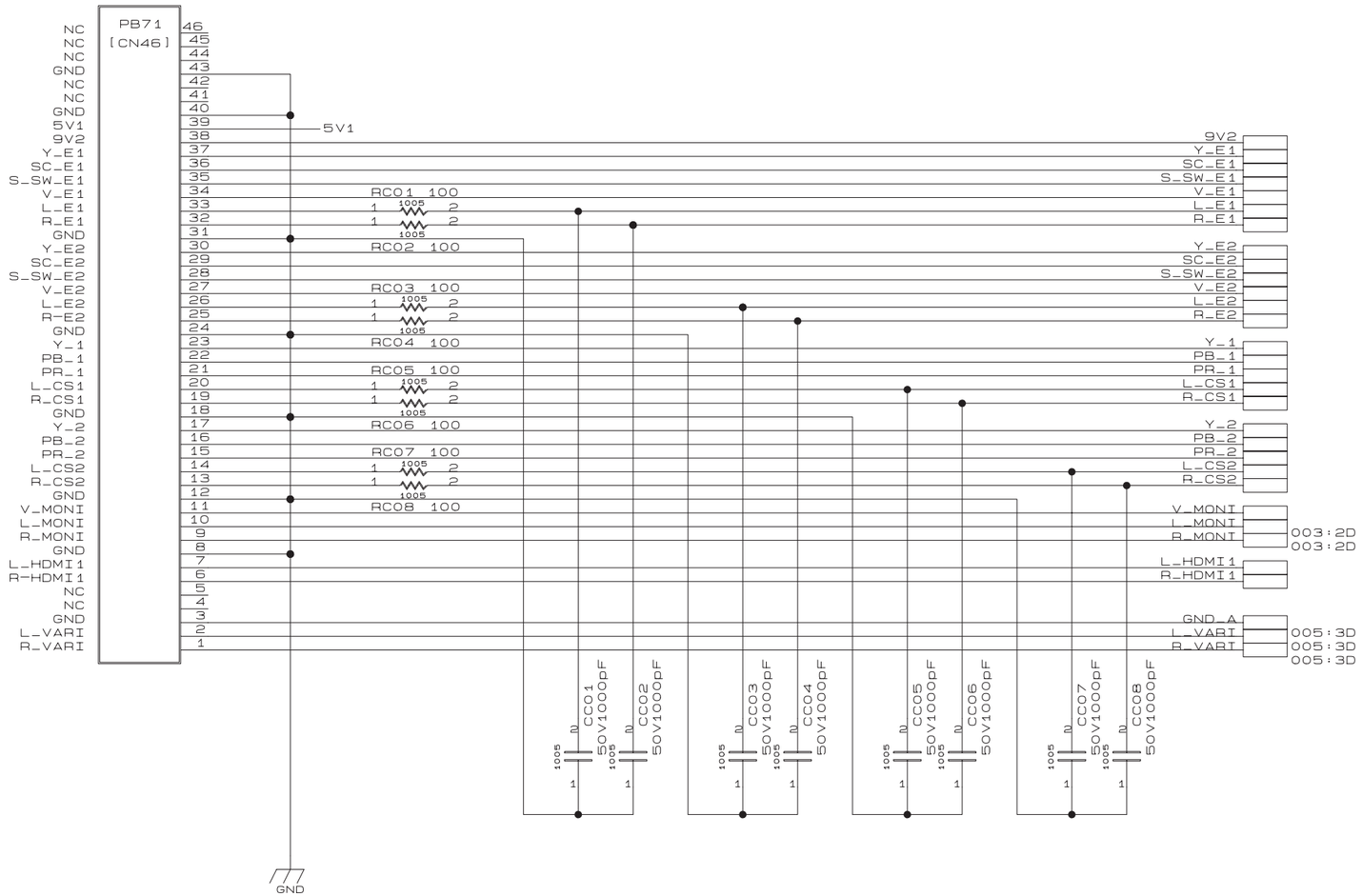
# CRT-D SVM/B



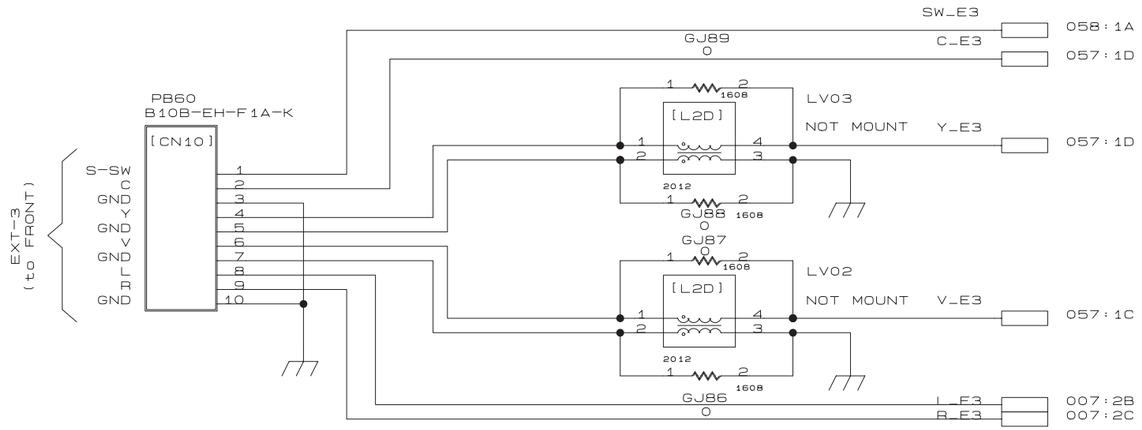



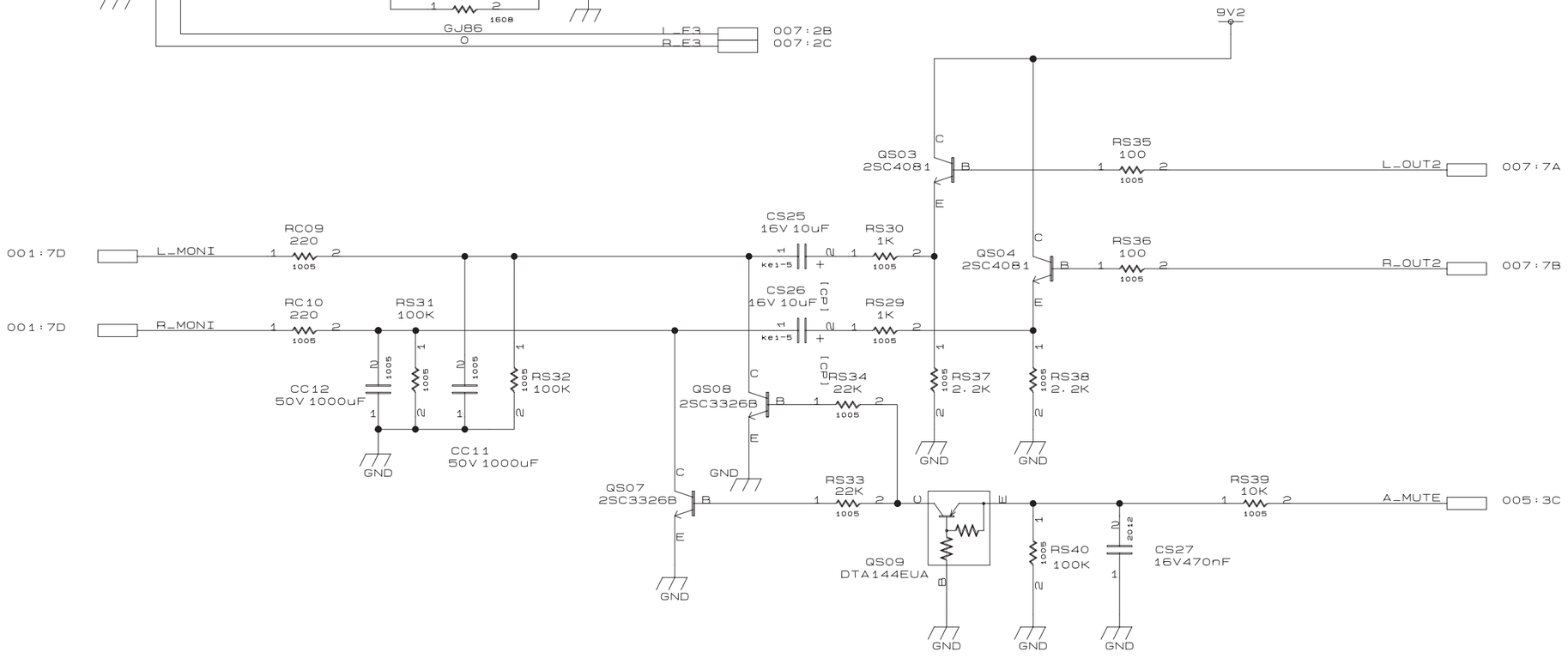

51HC85/57HC85/65HC15/65HC85
CRT-D (2/2)
SHEET-2/2




51HC85/57HC85/65HC15/65HC85
AV (1/10)
SHEET-1/10

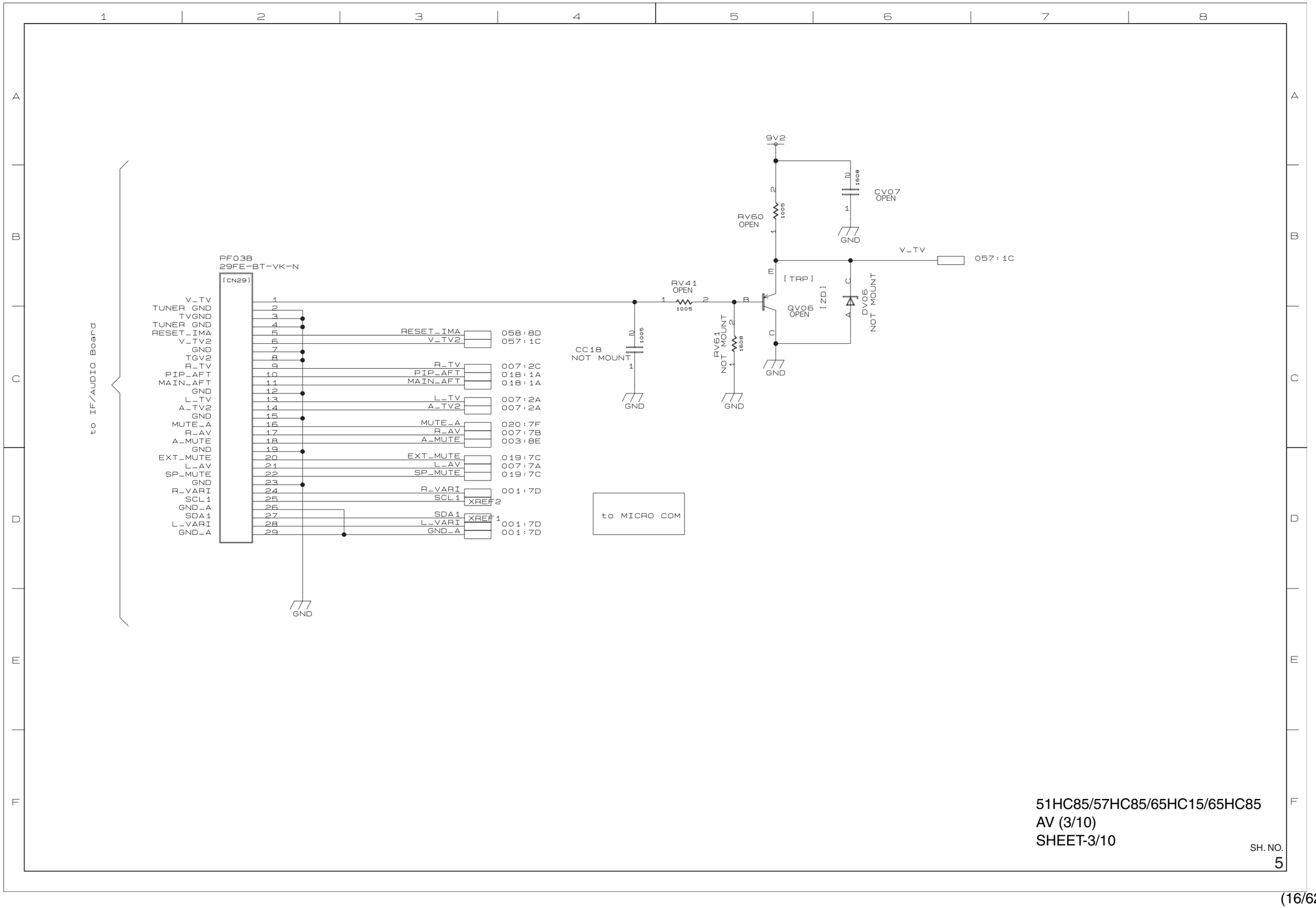
SH. NO.
1



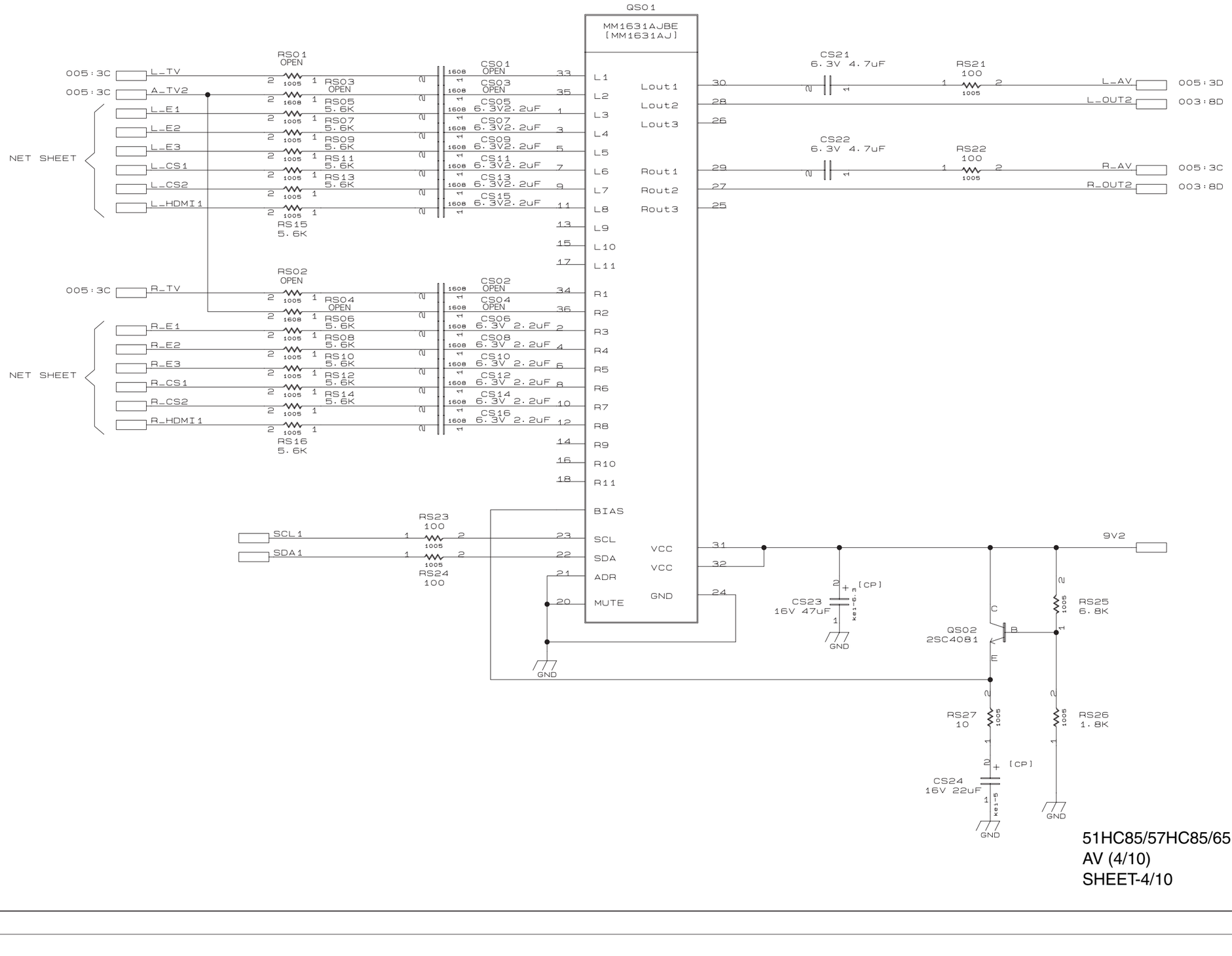

51HC85/57HC85/65HC15/65HC85
AV (2/10)
SHEET-2/10

SH. NO.
3



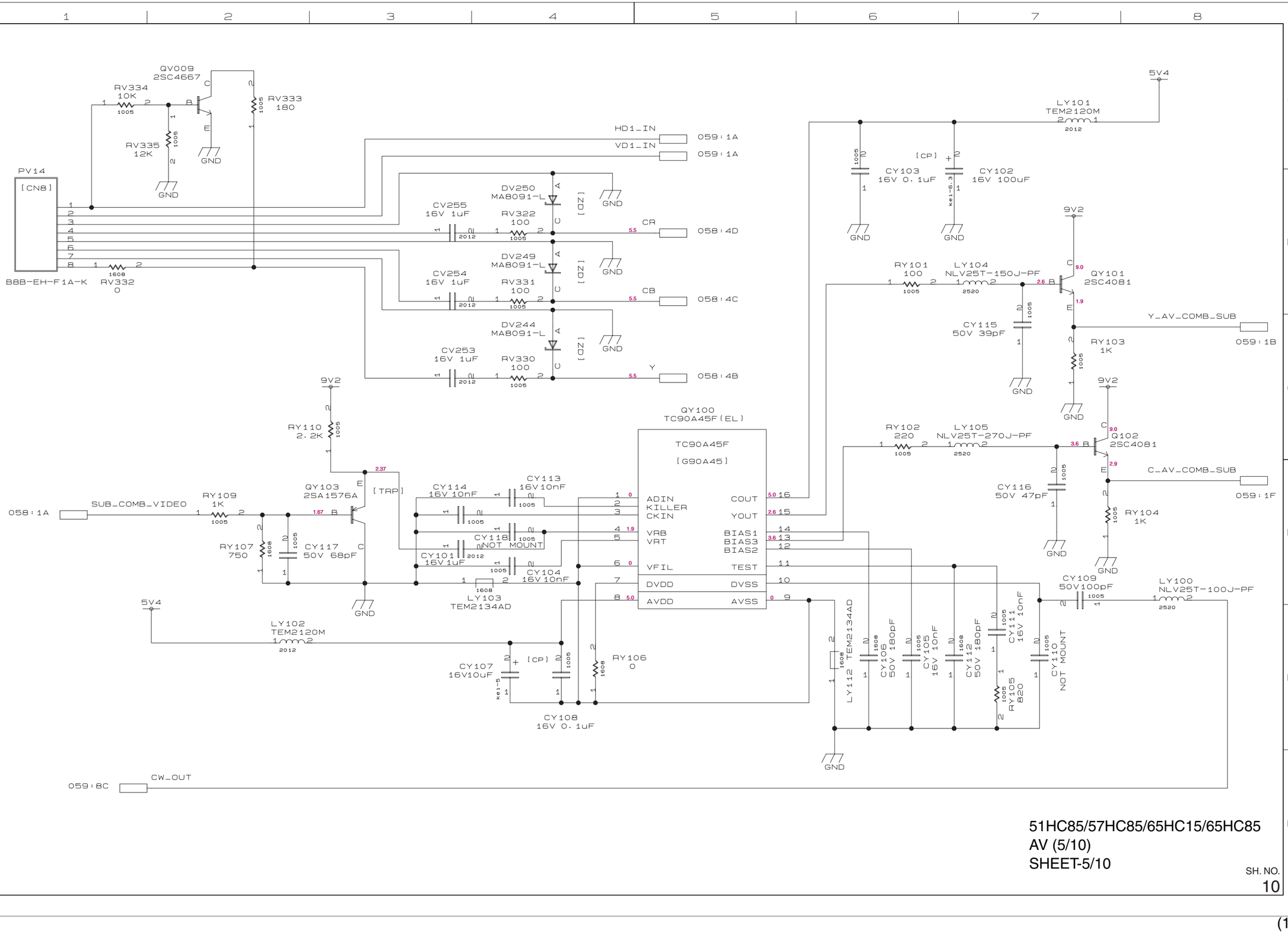

51HC85/57HC85/65HC15/65HC85
AV (3/10)
SHEET-3/10

SH. NO.
5



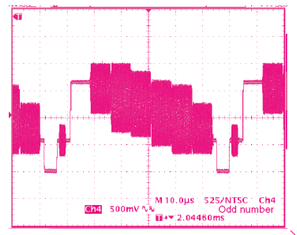

51HC85/57HC85/65HC15/65HC85
AV (4/10)
SHEET-4/10

SH. NO.
7




51HC85/57HC85/65HC15/65HC85
AV (5/10)
SHEET-5/10

SH. NO.
10



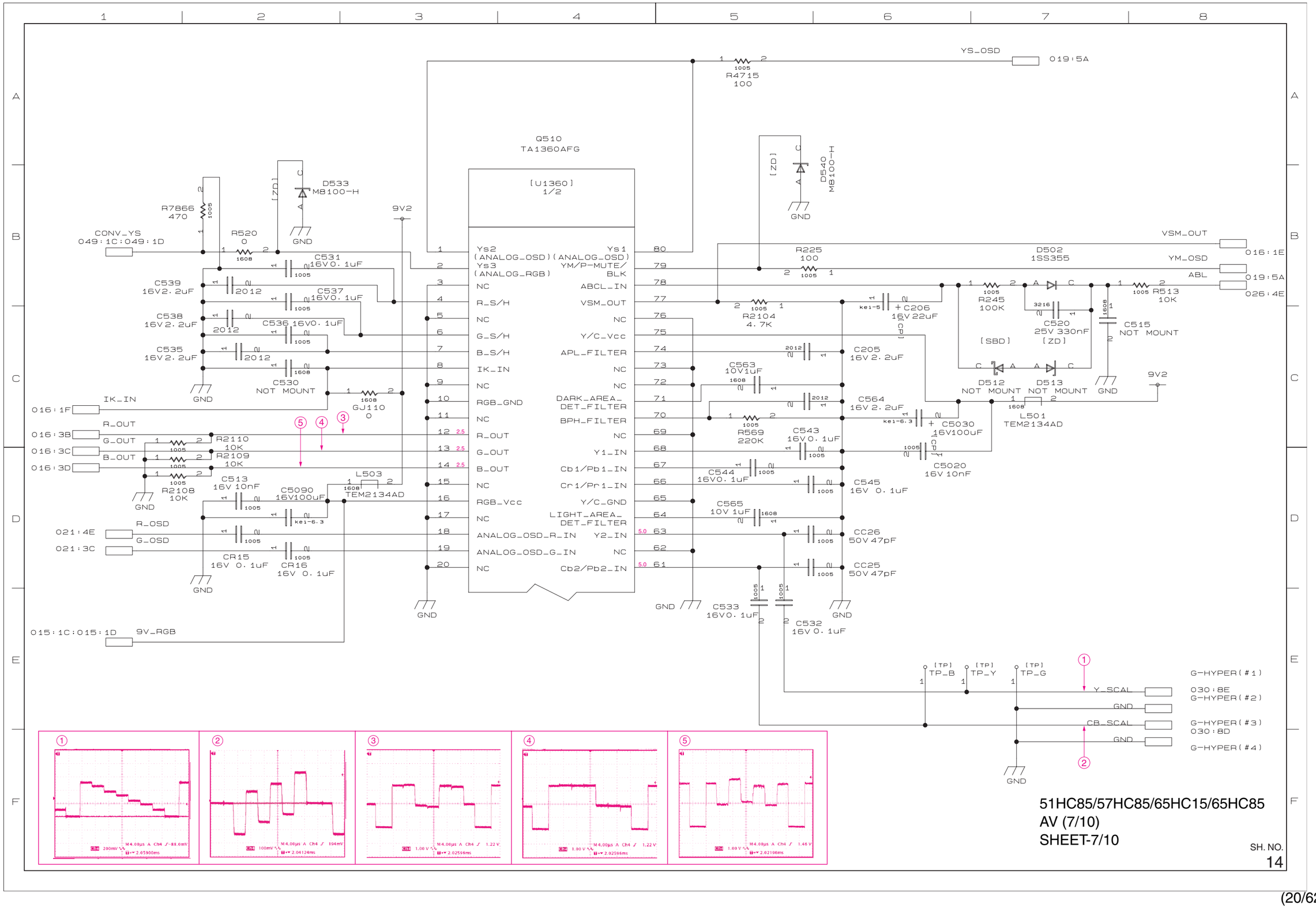

SY_2
RV006 100 1005
QV005 2SC4081
RV005 2.2K 1005
GND
Y_SW1
029:2E
9V2
RV007 2.2K 1005
V_AV_MC
022:1E:025:2B
RV008 100 1608
[TRP] QV004 2SA1576A
RV003 2.2K 1005
PB_SW1
029:2D
PB_1_2
RV004 100 1005
QV006 2SC4081
RV001 2.2K 1005
PR_SW1
029:2D
PR_1_2
RV002 100 1005
QV007 2SC4081

TC90A92F

PR_2_2
RV010 100 1005
QV001 2SC4081
RV009 2.2K 1005
PR_SW2
029:2B
PB_2_2
RV012 100 1005
QV002 2SC4081
RV011 2.2K 1005
PB_SW2
029:2B
Y_2_2
RV023 100 1005
QV003 2SC4081
RV013 2.2K 1005
Y_SW2
029:2C
Y_CD_SUB
RV025 100 1608
[TRP] QV008 2SA1576A
RV024 2.2K 1005
V_SUB_MC
022:5E:025:2D

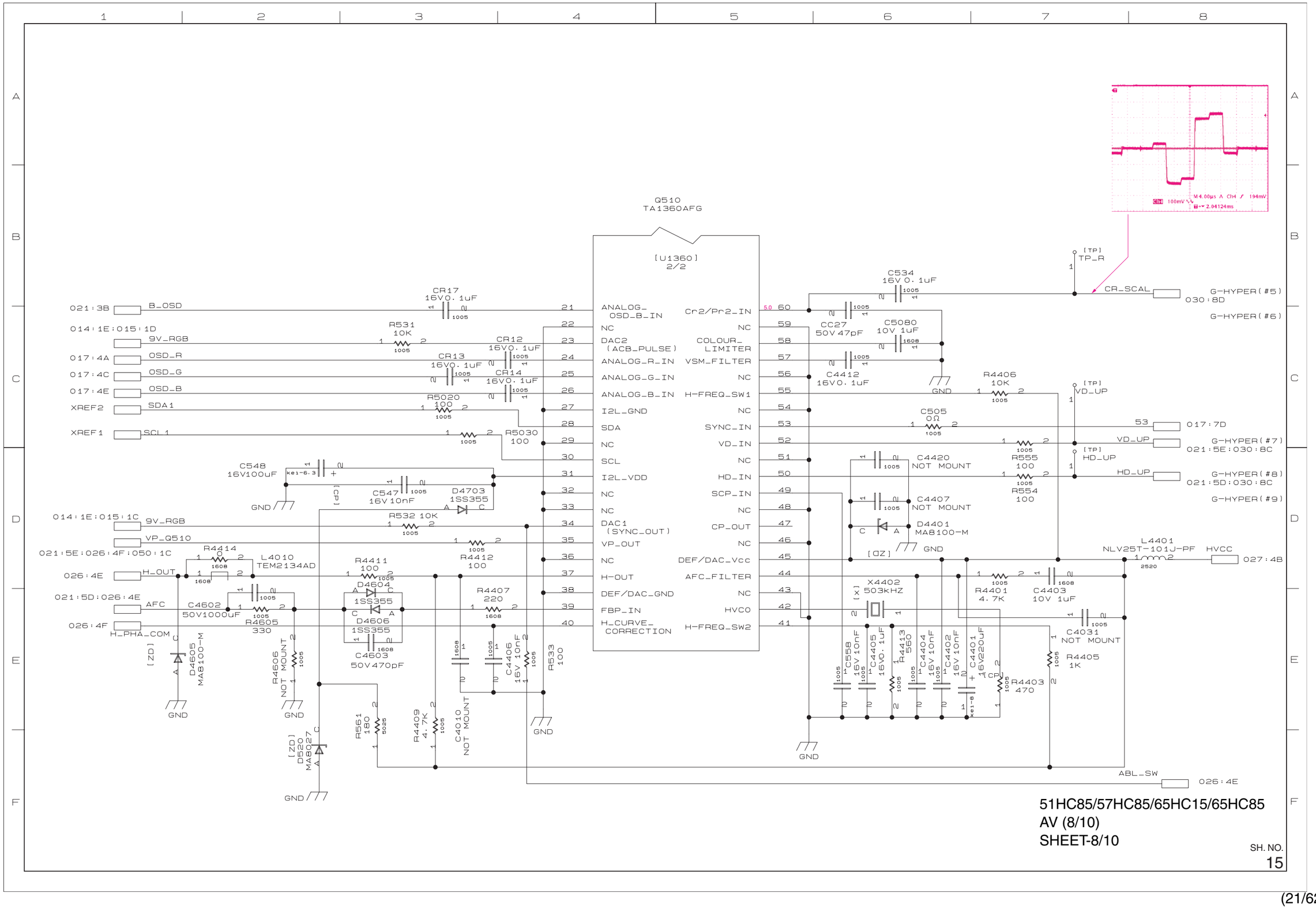
51HC85/57HC85/65HC15/65HC85
AV (6/10)
SHEET-6/10

SH. NO.
13



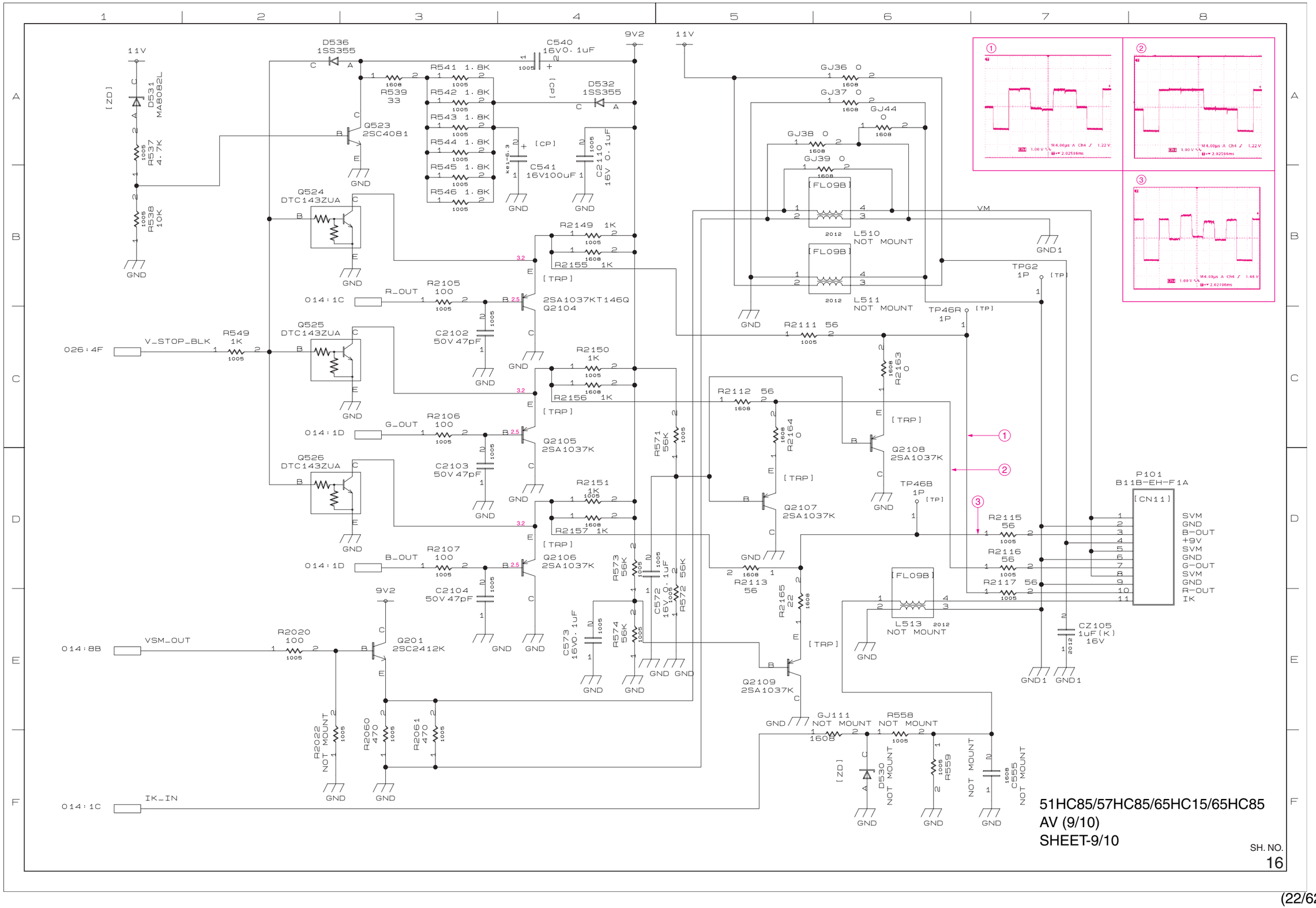

51HC85/57HC85/65HC15/65HC85
AV (7/10)
SHEET-7/10

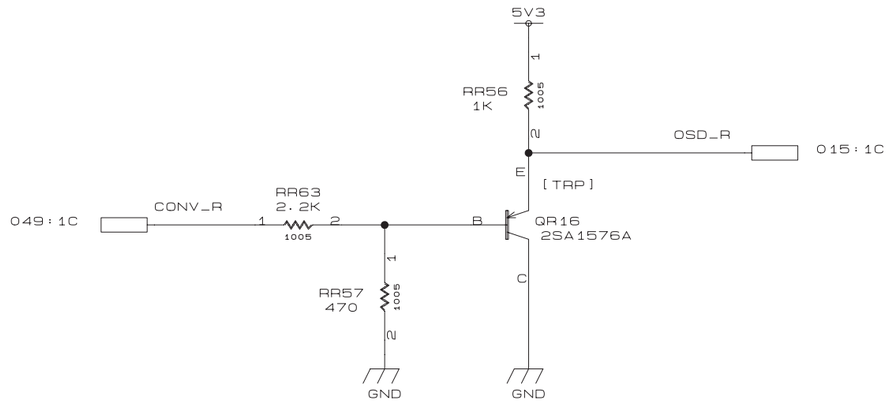
SH. NO.
14

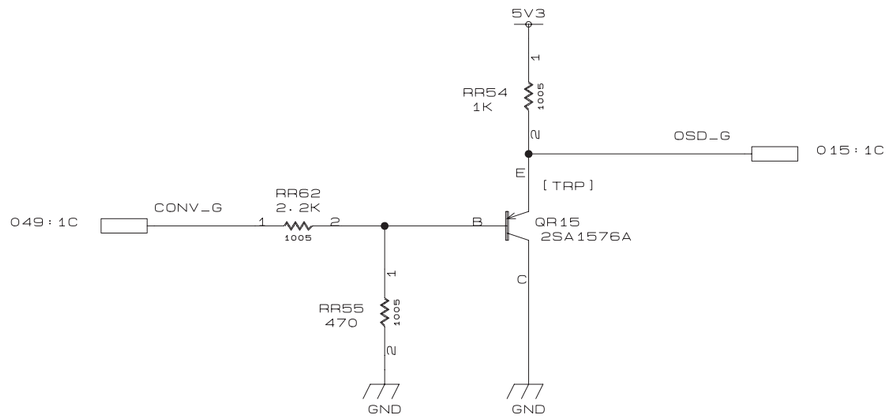


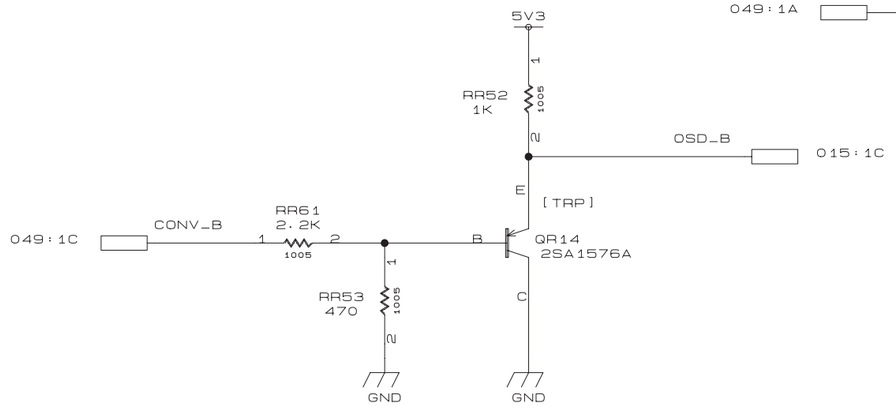

51HC85/57HC85/65HC15/65HC85
AV (8/10)
SHEET-8/10

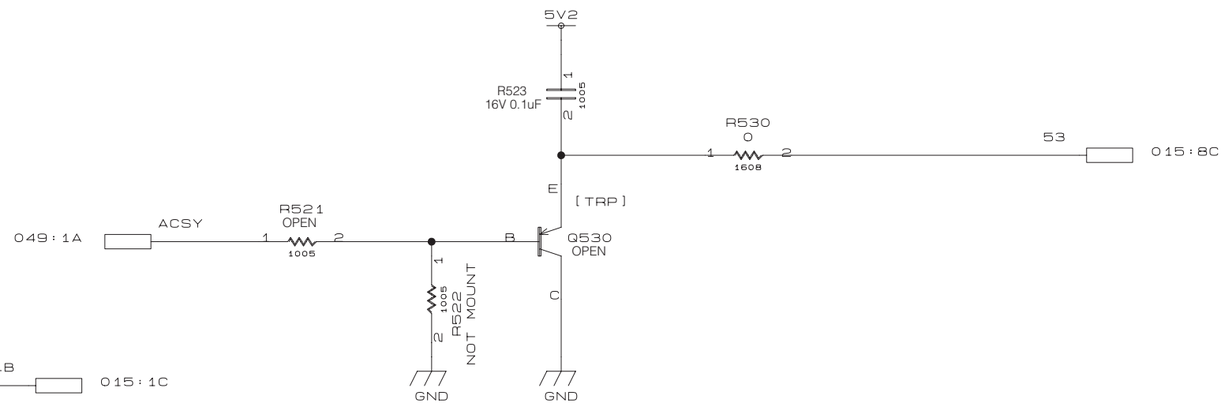
SH. NO.
15


11V
D536
1SS355
C540
16V0.1uF
9V2
11V
R541 1.8K
R542 1.8K
R543 1.8K
R544 1.8K
R545 1.8K
R546 1.8K
R539
33
D532
1SS355
[CP]
Q523
2SC4081
C541
16V100uF
C2110
16V 0.1uF
GND
[ZD]
D531
MA8082L
R537
4.7K
R538
10K
Q524
DTC143ZUA
R2149 1K
R2155 1K
[TRP]
014:1C
R_OUT
R2105
100
2SA1037KT146Q
Q2104
C2102
50V 47pF
Q525
DTC143ZUA
026:4F
V_STOP_BLK
R549
1K
R2150
1K
R2156 1K
Q2105
2SA1037K
C2103
50V 47pF
Q526
DTC143ZUA
014:1D
G_OUT
R2106
100
R2151
1K
R2157 1K
Q2106
2SA1037K
B_OUT
R2107
100
C2104
50V 47pF
R573
56K
C572
16V 0.1uF
R572
56K
C573
16V0.1uF
R574
56K
9V2
Q201
2SC2412K
014:8B
VSM_OUT
R2020
100
R2022
NOT MOUNT
R2060
470
R2061
470
014:1C
IK_IN
GJ36 0
GJ37 0
GJ44
0
GJ38 0
GJ39 0
[FL09B]
L510
NOT MOUNT
L511
NOT MOUNT
VM
GND1
TPG2
1P
[TP]
TP46R
1P
R2111 56
R2112 56
R2163
0
R2164
0
R571
56K
Q2108
2SA1037K
Q2107
2SA1037K
TP46B
1P
R2113
56
R2165
22
Q2109
2SA1037K
GJ111
NOT MOUNT
R558
NOT MOUNT
[ZD]
D530
NOT MOUNT
R559
C555
NOT MOUNT
R2115
56
R2116
56
R2117 56
[FL09B]
L513
NOT MOUNT
CZ105
1uF(K)
16V
P101
B11B-EH-F1A
[CN11]
SVM
GND
B-OUT
+9V
SVM
GND
G-OUT
SVM
GND
R-OUT
IK
51HC85/57HC85/65HC15/65HC85
AV (9/10)
SHEET-9/10
SH. NO.
16



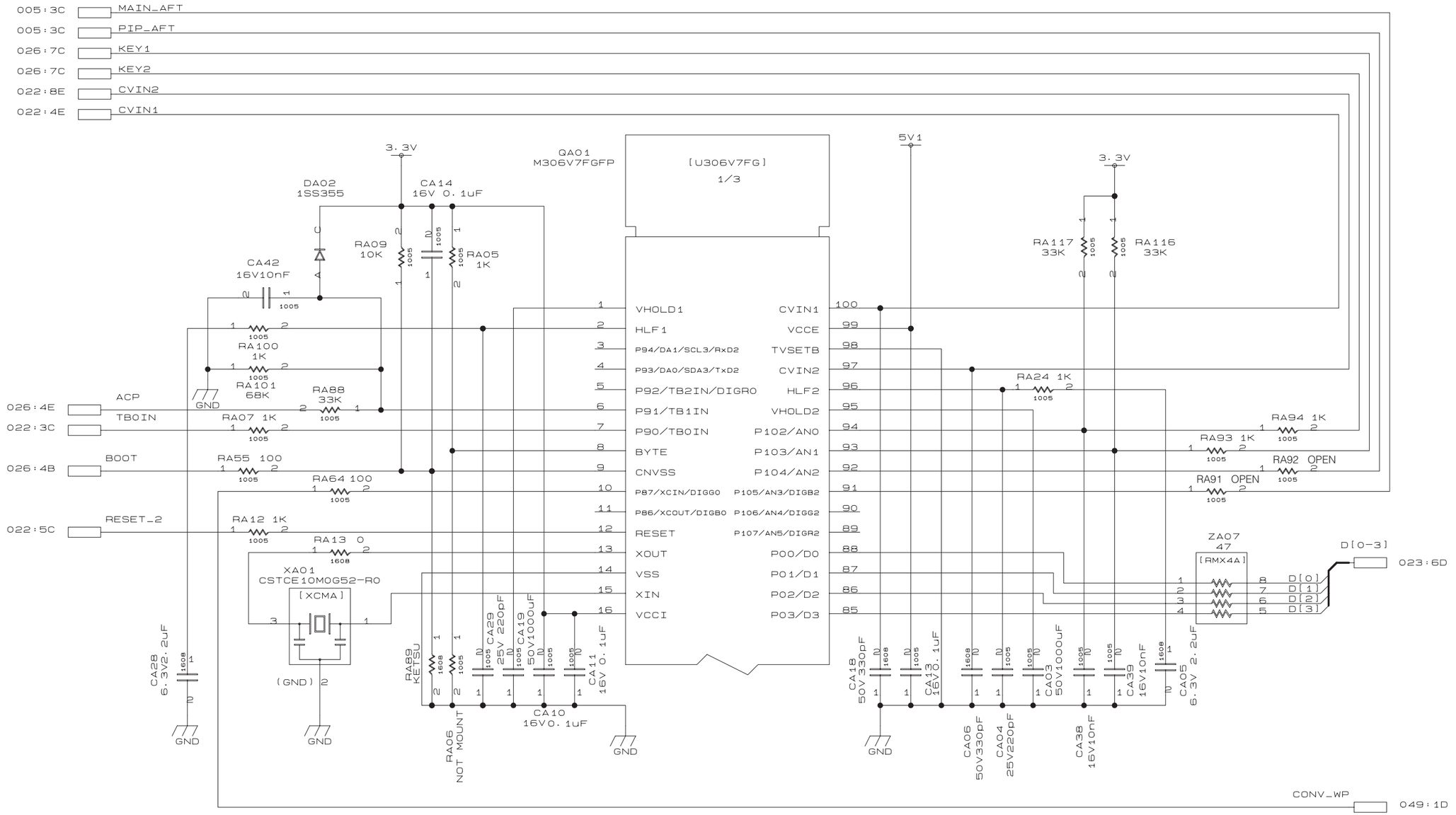



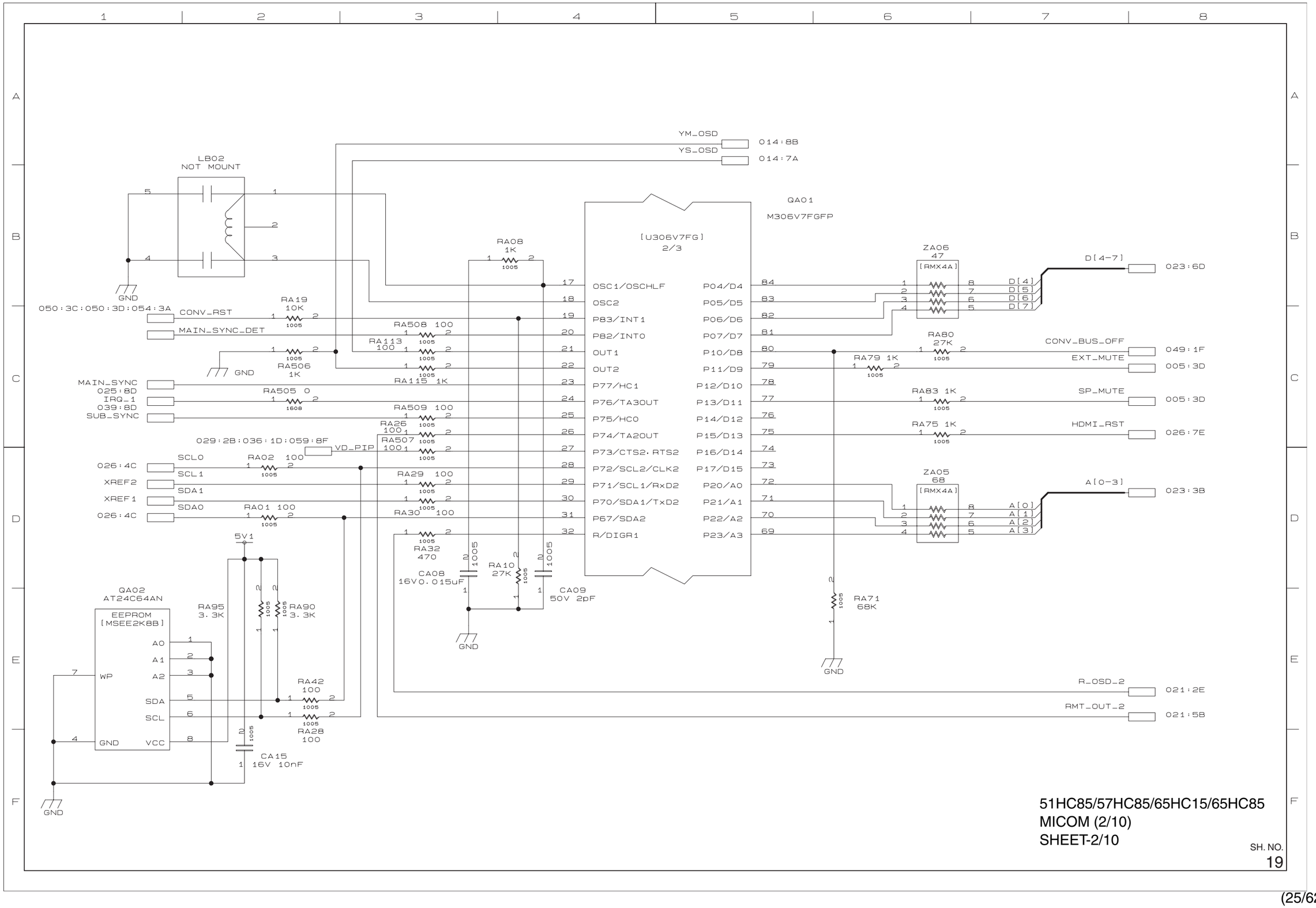

51HC85/57HC85/65HC15/65HC85
AV (10/10)
SHEET-10/10

SH. NO.
17



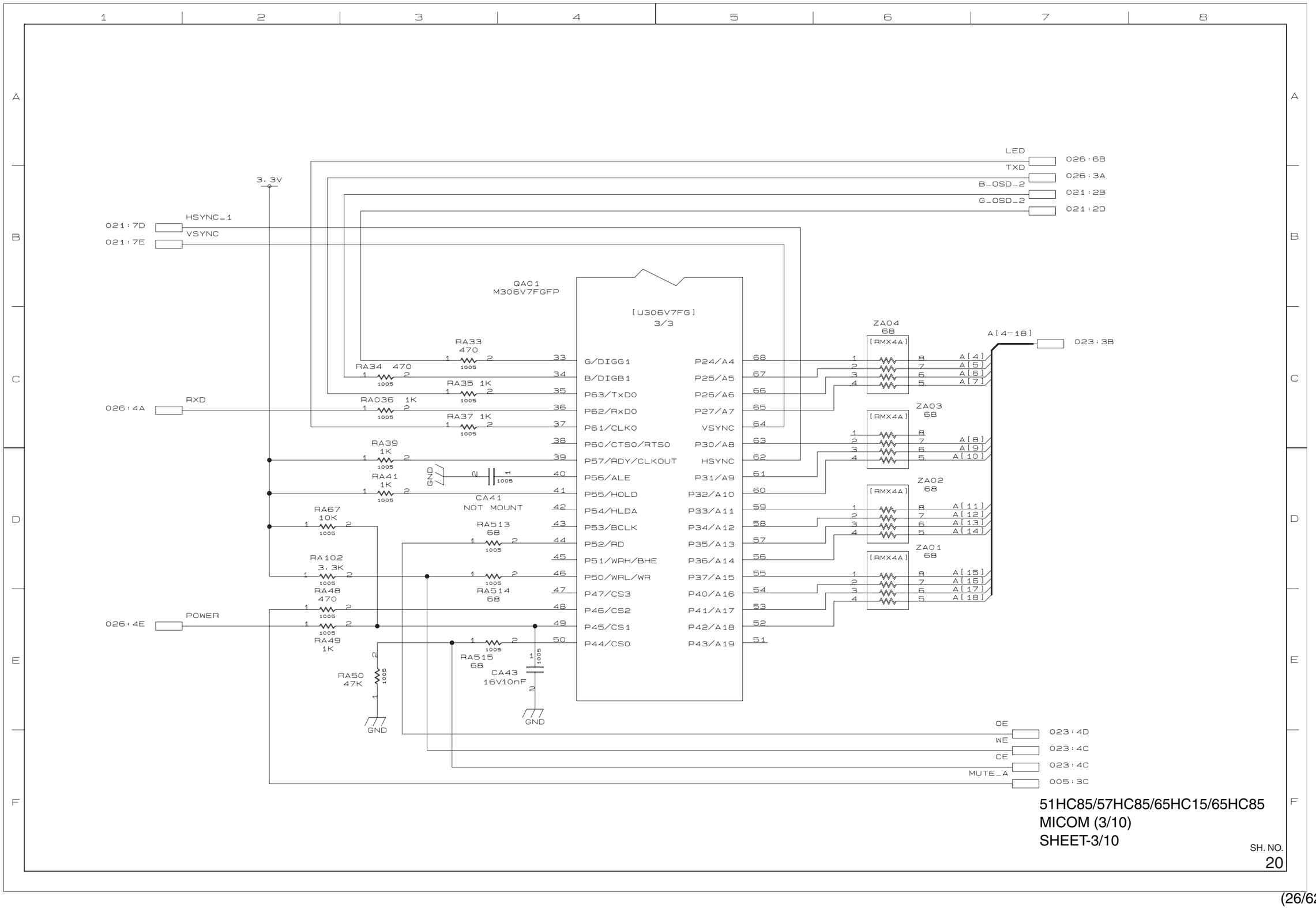

51HC85/57HC85/65HC15/65HC85
MICOM (1/10)
SHEET-1/10

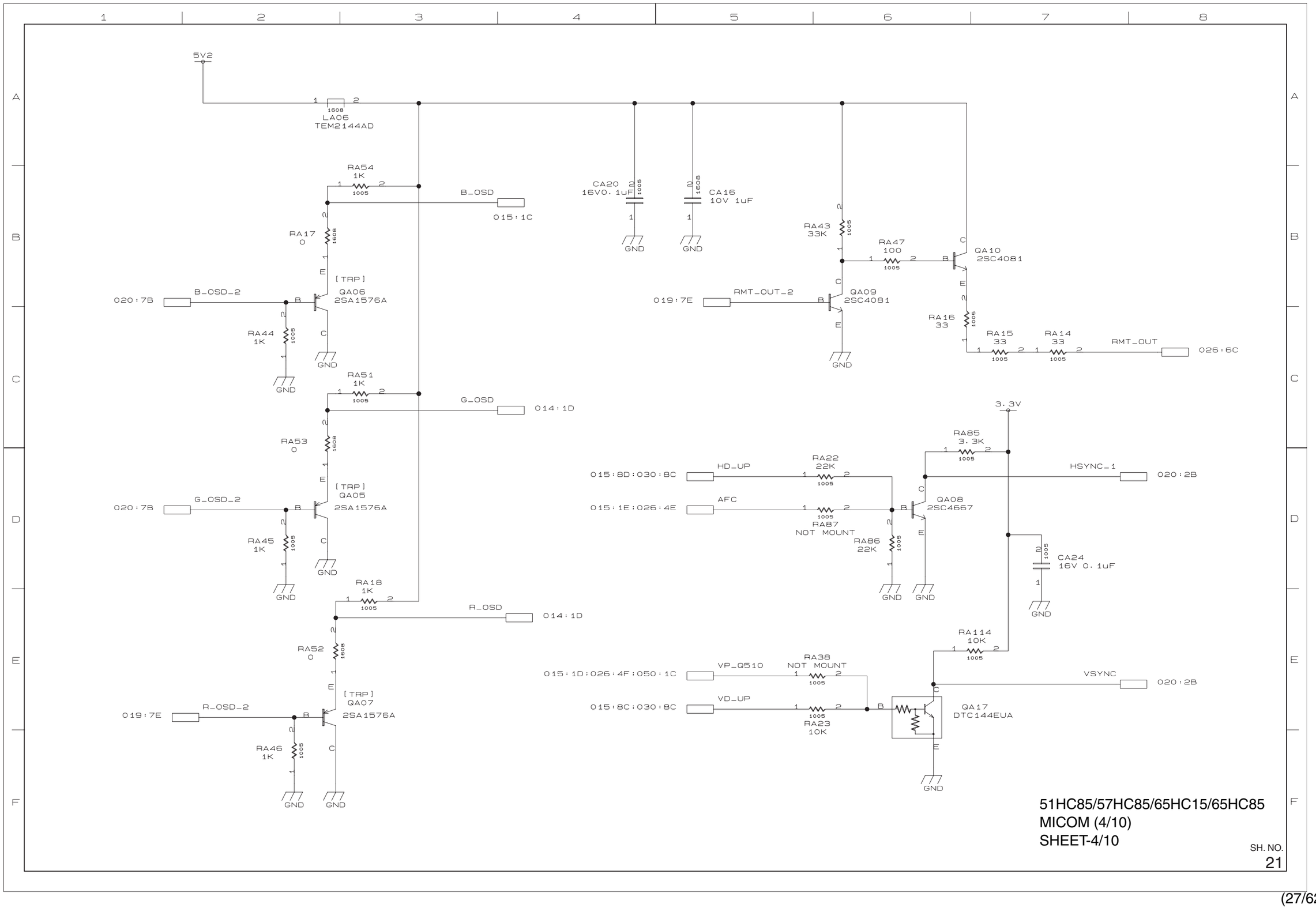
SH. NO.
18

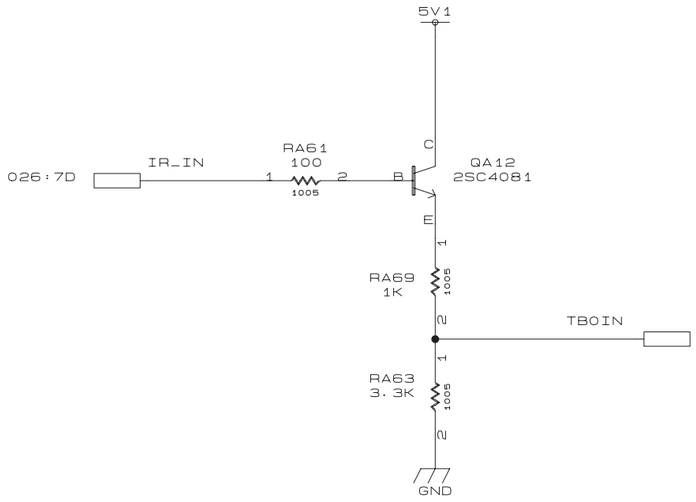


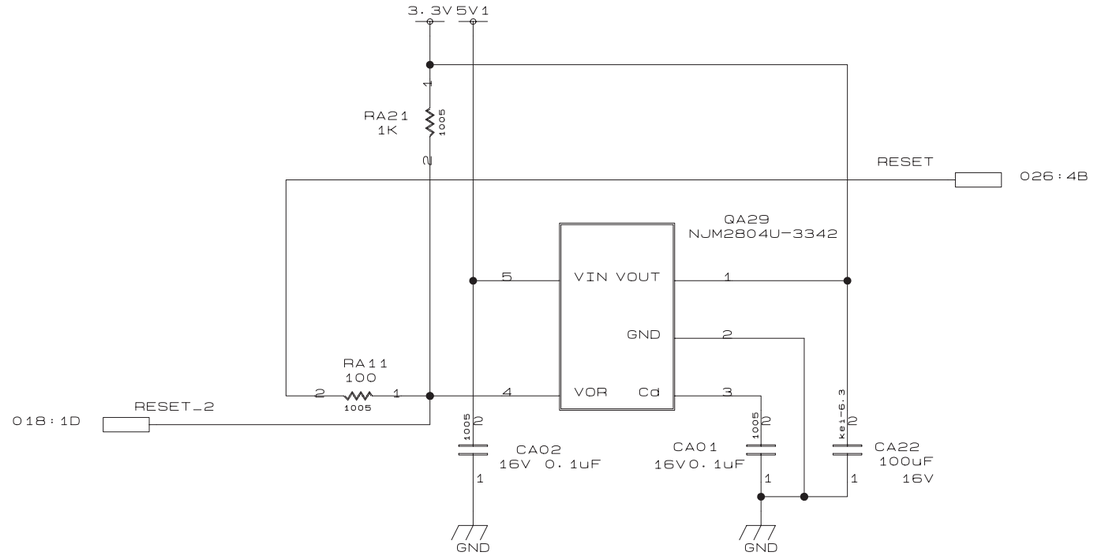

51HC85/57HC85/65HC15/65HC85
MICOM (2/10)
SHEET-2/10

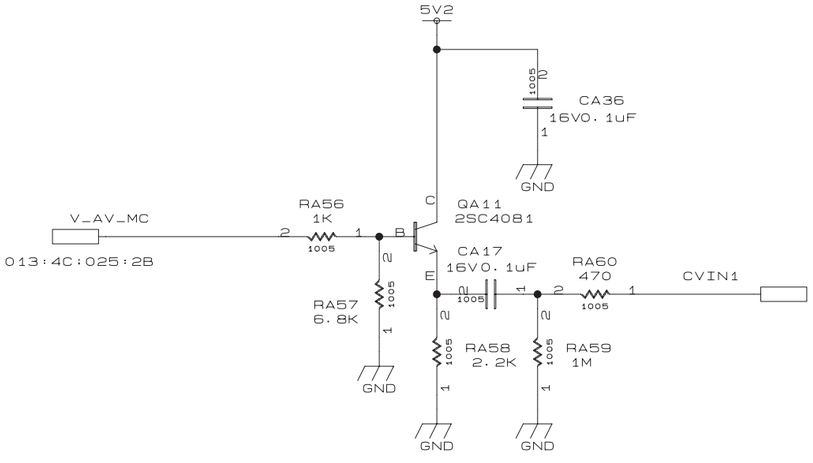
SH. NO.
19

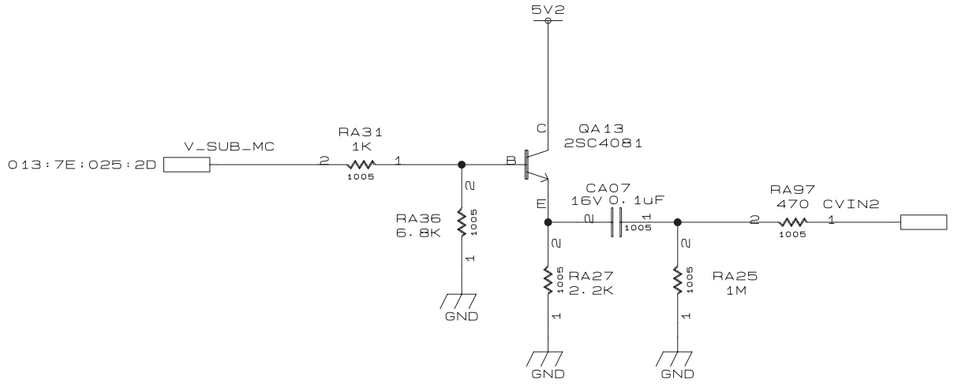

LED
026:6B
TXD
026:3A
B_OSD_2
021:2B
G_OSD_2
021:2D
3.3V
021:7D
HSYNC_1
021:7E
VSYNC
QA01
M306V7FGFP
[U306V7FG]
3/3
RA33
470
RA34 470
RA35 1K
RA036 1K
RA37 1K
RA39
1K
RA41
1K
CA41
NOT MOUNT
RA67
10K
RA102
3.3K
RA48
470
RA49
1K
RA50
47K
RA513
68
RA514
68
RA515
68
CA43
16V10nF
026:4A
RXD
026:4E
POWER
G/DIGG1
B/DIGB1
P63/TxD0
P62/RxD0
P61/CLK0
P60/CTS0/RTS0
P57/RDY/CLKOUT
P56/ALE
P55/HOLD
P54/HLDA
P53/BCLK
P52/RD
P51/WRH/BHE
P50/WRL/WR
P47/CS3
P46/CS2
P45/CS1
P44/CS0
P24/A4
P25/A5
P26/A6
P27/A7
VSYNC
P30/A8
HSYNC
P31/A9
P32/A10
P33/A11
P34/A12
P35/A13
P36/A14
P37/A15
P40/A16
P41/A17
P42/A18
P43/A19
ZA04
68
ZA03
68
ZA02
68
ZA01
68
[RMX4A]
A[4-18]
023:3B
A[4]
A[5]
A[6]
A[7]
A[8]
A[9]
A[10]
A[11]
A[12]
A[13]
A[14]
A[15]
A[16]
A[17]
A[18]
GND
OE
023:4D
WE
023:4C
CE
023:4C
MUTE_A
005:3C
51HC85/57HC85/65HC15/65HC85
MICOM (3/10)
SHEET-3/10
SH. NO.
20


5V2
LA06
TEM2144AD
RA54
1K
B_OSD
015:1C
RA17
0
[TRP]
020:7B
B_OSD_2
QA06
2SA1576A
RA44
1K
GND
RA51
1K
G_OSD
014:1D
RA53
0
[TRP]
QA05
020:7B
G_OSD_2
2SA1576A
RA45
1K
GND
RA18
1K
R_OSD
014:1D
RA52
0
[TRP]
QA07
019:7E
R_OSD_2
2SA1576A
RA46
1K
GND
CA20
16V0.1uF
CA16
10V 1uF
GND
RA43
33K
RA47
100
QA10
2SC4081
019:7E
RMT_OUT_2
QA09
2SC4081
RA16
33
RA15
33
RA14
33
RMT_OUT
026:6C
GND
3.3V
RA85
3.3K
HSYNC_1
020:2B
015:8D:030:8C
HD_UP
RA22
22K
015:1E:026:4E
AFC
QA08
2SC4667
RA87
NOT MOUNT
RA86
22K
CA24
16V 0.1uF
GND
RA114
10K
VSYNC
020:2B
015:1D:026:4F:050:1C
VP_Q510
RA38
NOT MOUNT
015:8C:030:8C
VD_UP
RA23
10K
QA17
DTC144EUA
GND
51HC85/57HC85/65HC15/65HC85
MICOM (4/10)
SHEET-4/10
SH. NO.
21



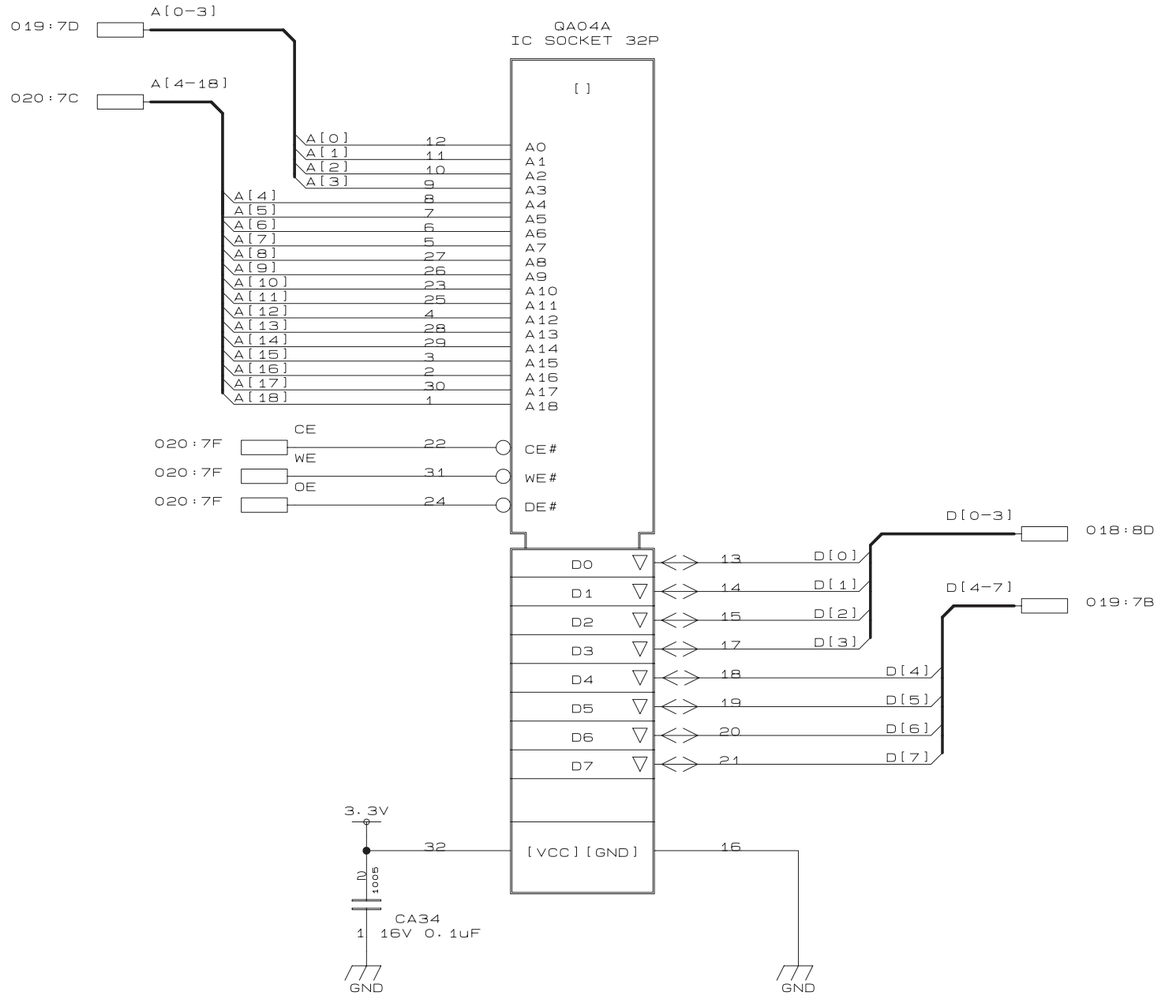



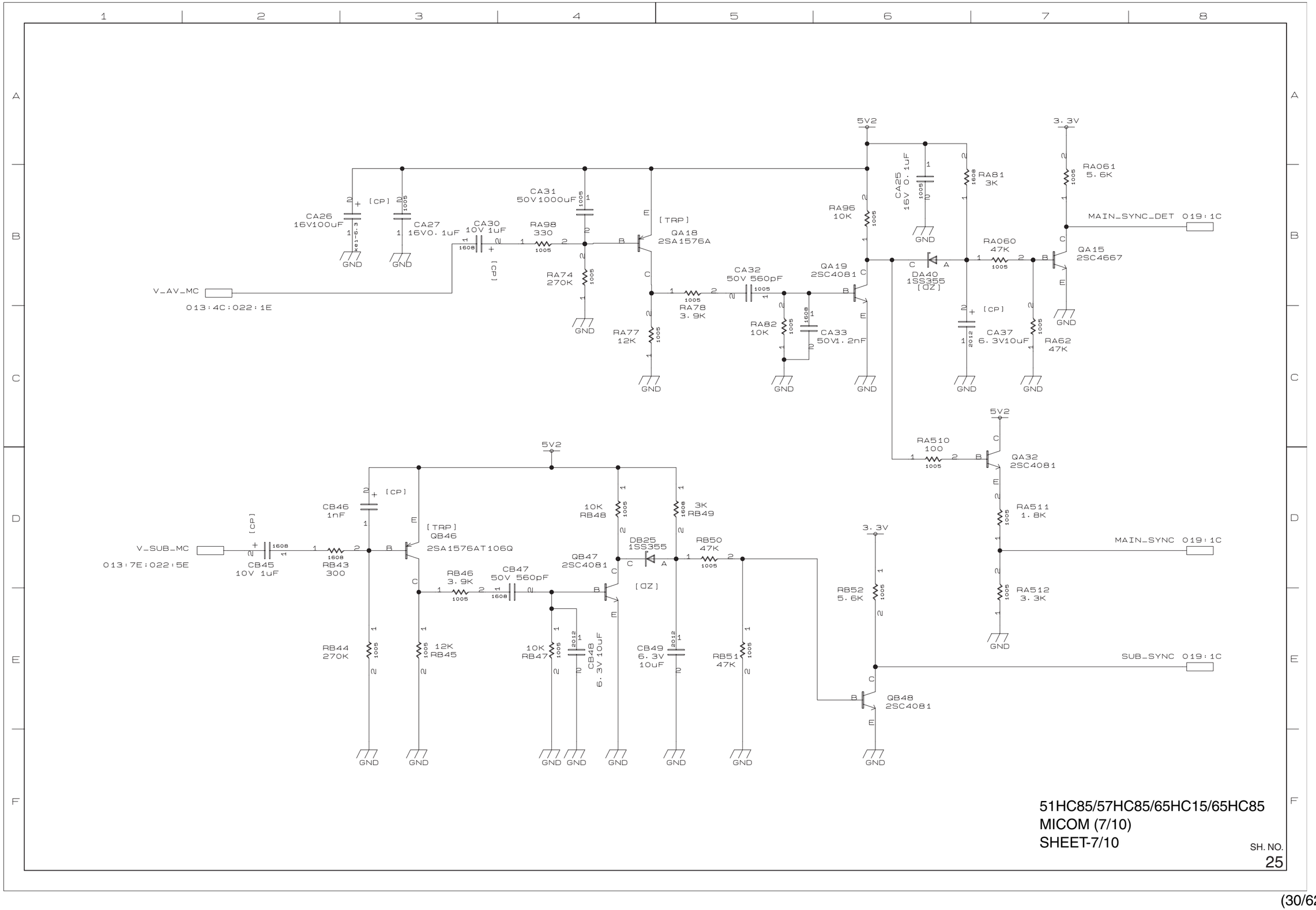

51HC85/57HC85/65HC15/65HC85
MICOM (5/10)
SHEET-5/10

SH. NO.
22



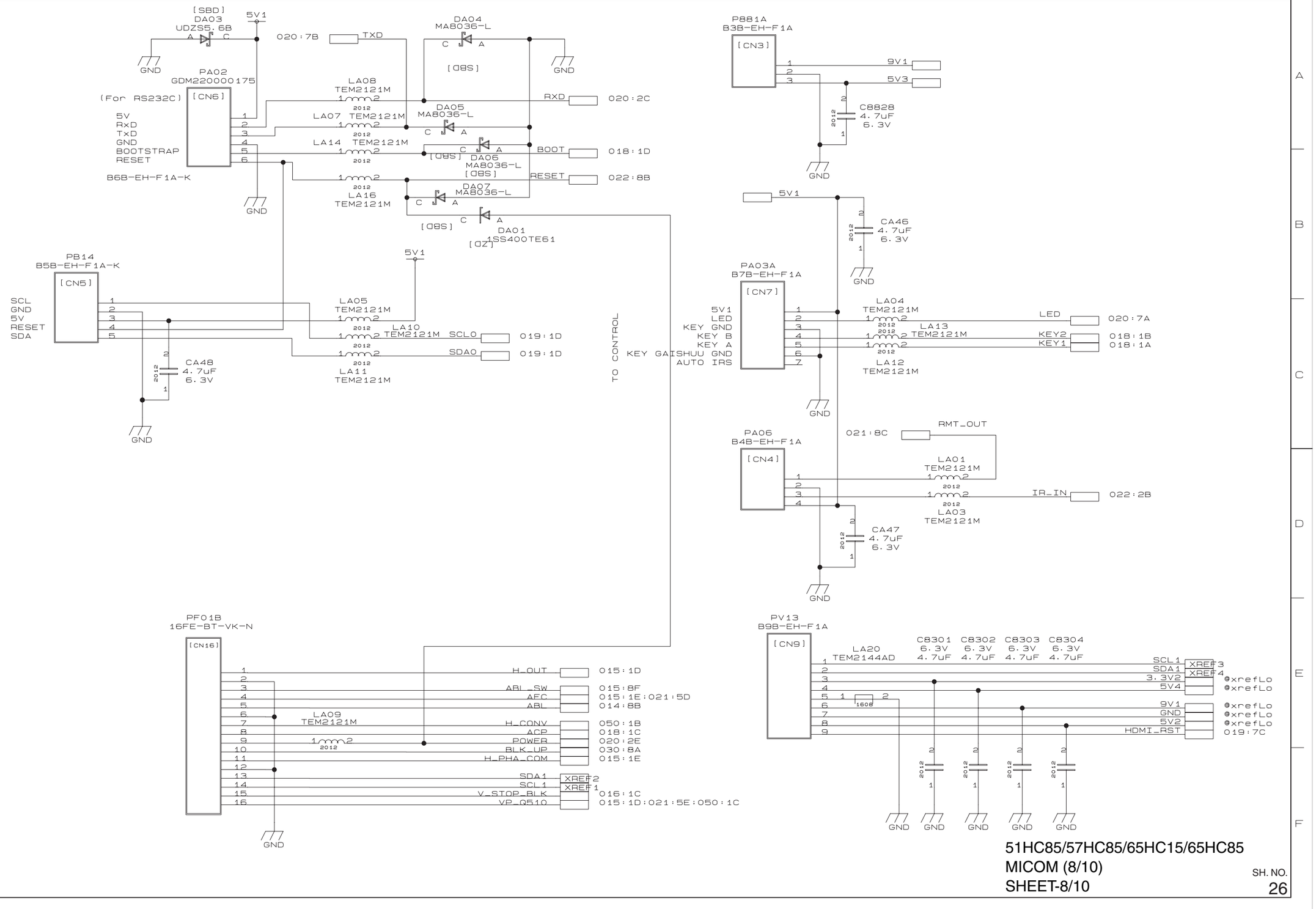

51HC85/57HC85/65HC15/65HC85
MICOM (6/10)
SHEET-6/10

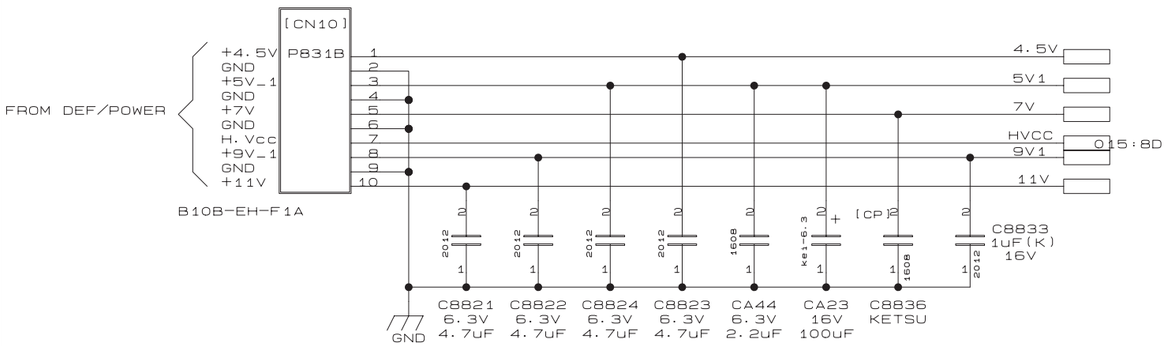
SH. NO.
23

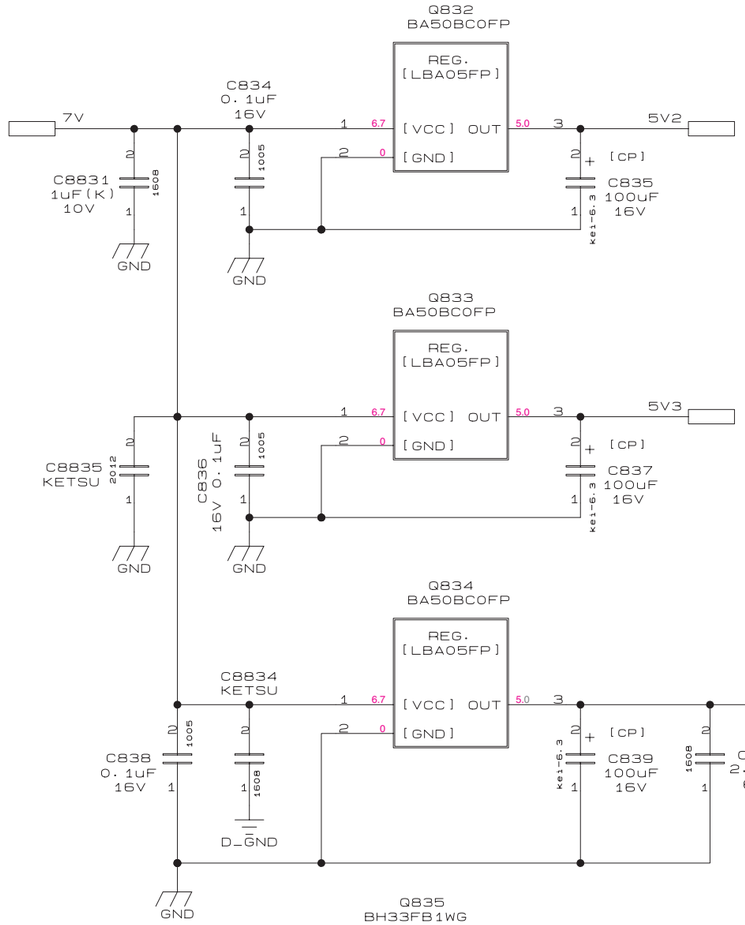


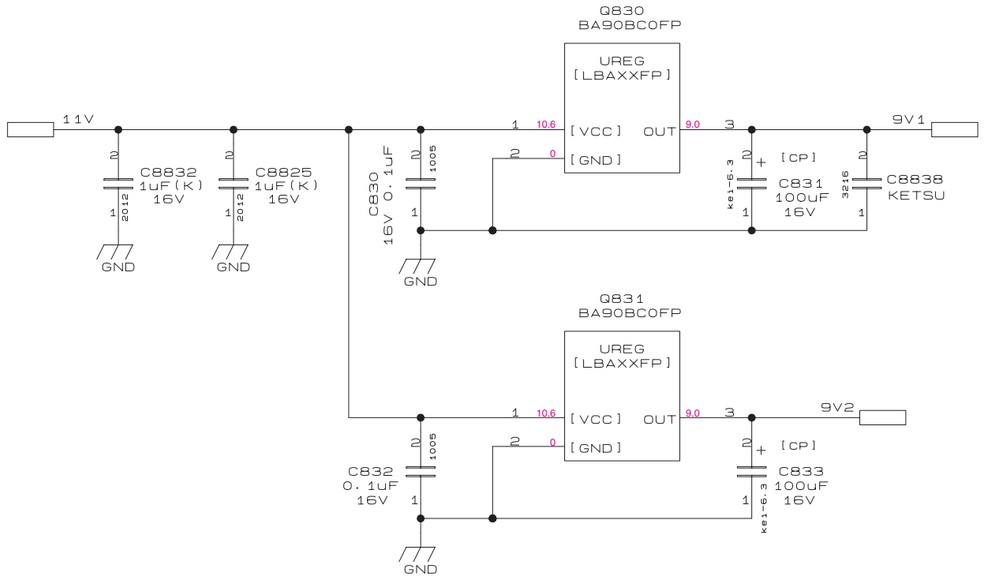

51HC85/57HC85/65HC15/65HC85
MICOM (7/10)
SHEET-7/10

SH. NO.
25


[SBD]
DA03
UDZS5.6B
5V1
020:7B
TXD
DA04
MA8036-L
[DBS]
GND
PA02
GDM220000175
(For RS232C)
[CN6]
5V
RxD
TxD
GND
BOOTSTRAP
RESET
B6B-EH-F1A-K
LA08
TEM2121M
LA07 TEM2121M
LA14 TEM2121M
LA16
TEM2121M
2012
DA05
MA8036-L
DA06
MA8036-L
DA07
MA8036-L
DA01
1SS400TE61
[DZ]
RXD
020:2C
BOOT
018:1D
RESET
022:8B
P881A
B3B-EH-F1A
[CN3]
9V1
5V3
C8828
4.7uF
6.3V
CA46
4.7uF
6.3V
PB14
B5B-EH-F1A-K
[CN5]
SCL
GND
5V
RESET
SDA
LA05
TEM2121M
LA10
TEM2121M
LA11
TEM2121M
SCL0
SDA0
019:1D
CA48
4.7uF
6.3V
TO CONTROL
KEY GAISHUU
PA03A
B7B-EH-F1A
[CN7]
5V1
LED
KEY GND
KEY B
KEY A
GND
AUTO IRS
LA04
TEM2121M
LA13
TEM2121M
LA12
TEM2121M
LED
020:7A
KEY2
018:1B
KEY1
018:1A
PA06
B4B-EH-F1A
[CN4]
021:8C
RMT_OUT
LA01
TEM2121M
LA03
TEM2121M
IR_IN
022:2B
CA47
4.7uF
6.3V
PF01B
16FE-BT-VK-N
[CN16]
LA09
TEM2121M
H_OUT
015:1D
ABL_SW
AFC
ABL
015:8F
015:1E:021:5D
014:8B
H_CONV
ACP
POWER
BLK_UP
H_PHA_COM
050:1B
018:1C
020:2E
030:8A
015:1E
SDA1
SCL1
V_STOP_BLK
VP_Q510
XREF2
XREF1
016:1C
015:1D:021:5E:050:1C
PV13
B9B-EH-F1A
[CN9]
LA20
TEM2144AD
C8301
6.3V
4.7uF
C8302
6.3V
4.7uF
C8303
6.3V
4.7uF
C8304
6.3V
4.7uF
1608
SCL1
SDA1
3.3V2
5V4
9V1
GND
5V2
HDMI_RST
XREF3
XREF4
@xrefLo
@xrefLo
@xrefLo
@xrefLo
@xrefLo
@xrefLo
019:7C
51HC85/57HC85/65HC15/65HC85
MICOM (8/10)
SHEET-8/10
SH. NO.
26

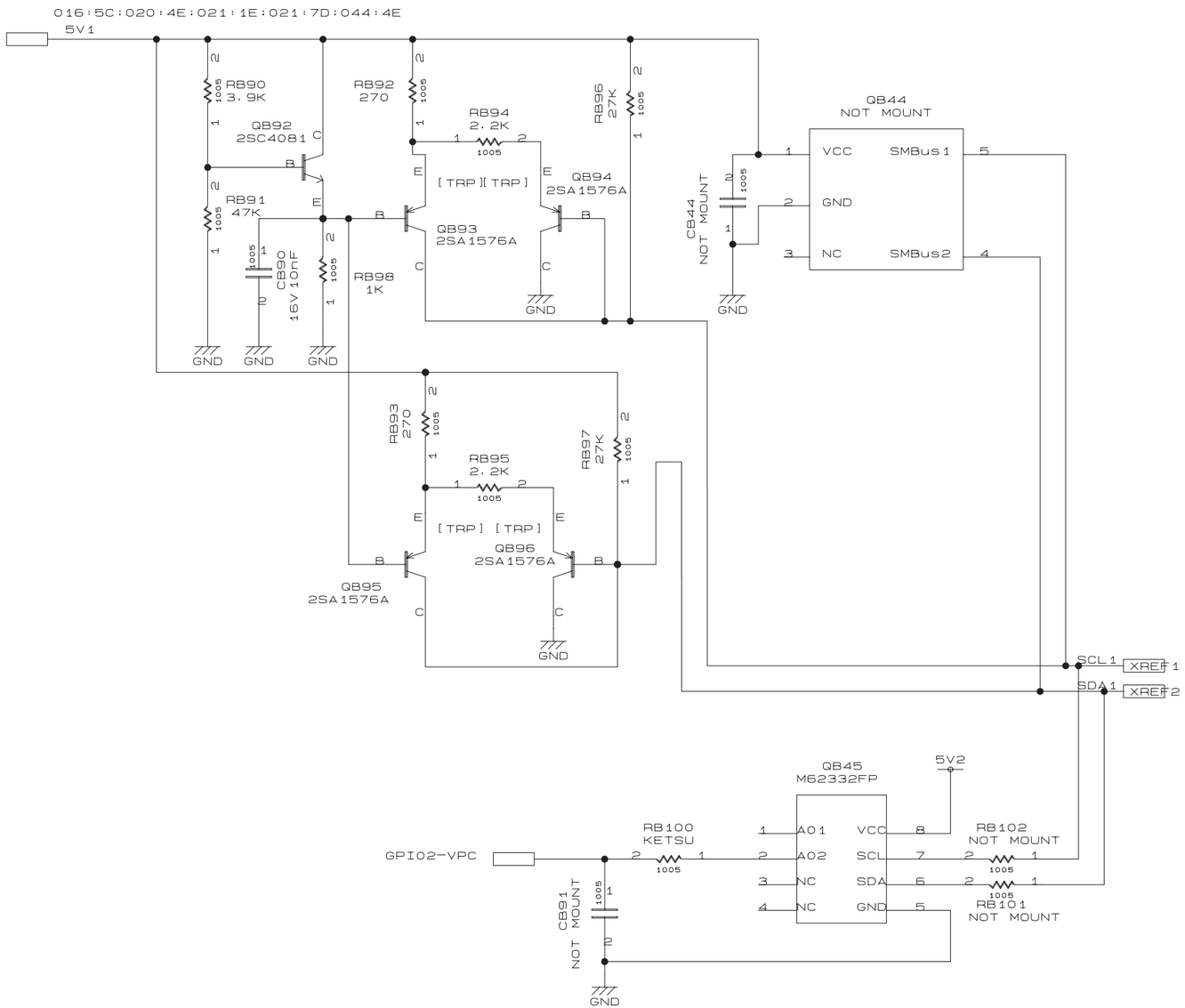


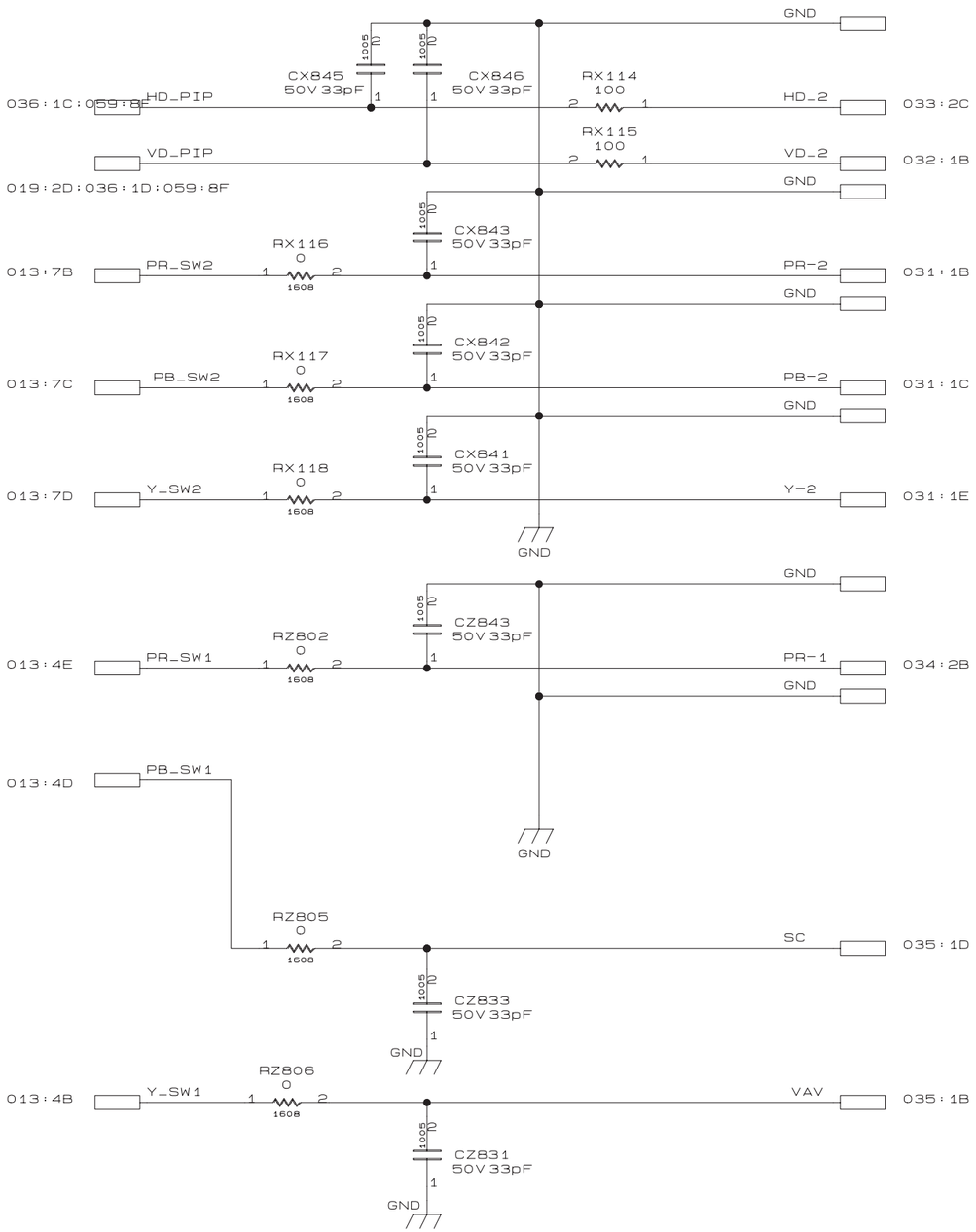

51HC85/57HC85/65HC15/65HC85
MICOM (9/10)
SHEET-9/10

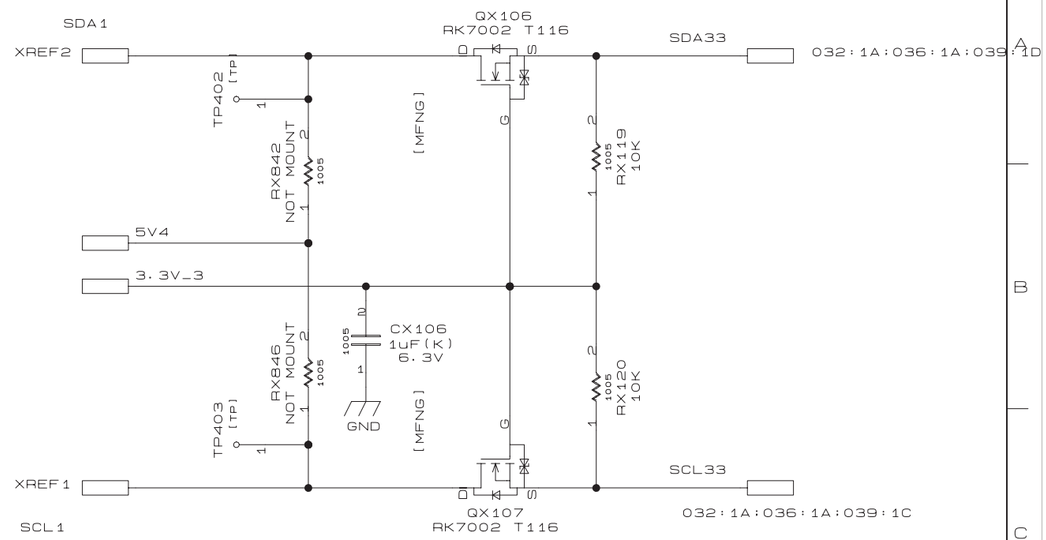
SH. NO.
27

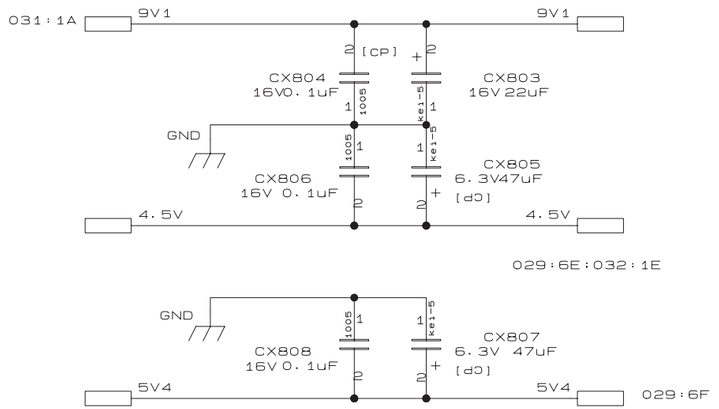



51HC85/57HC85/65HC15/65HC85
MICOM (10/10)
SHEET-10/10

SH. NO.
28

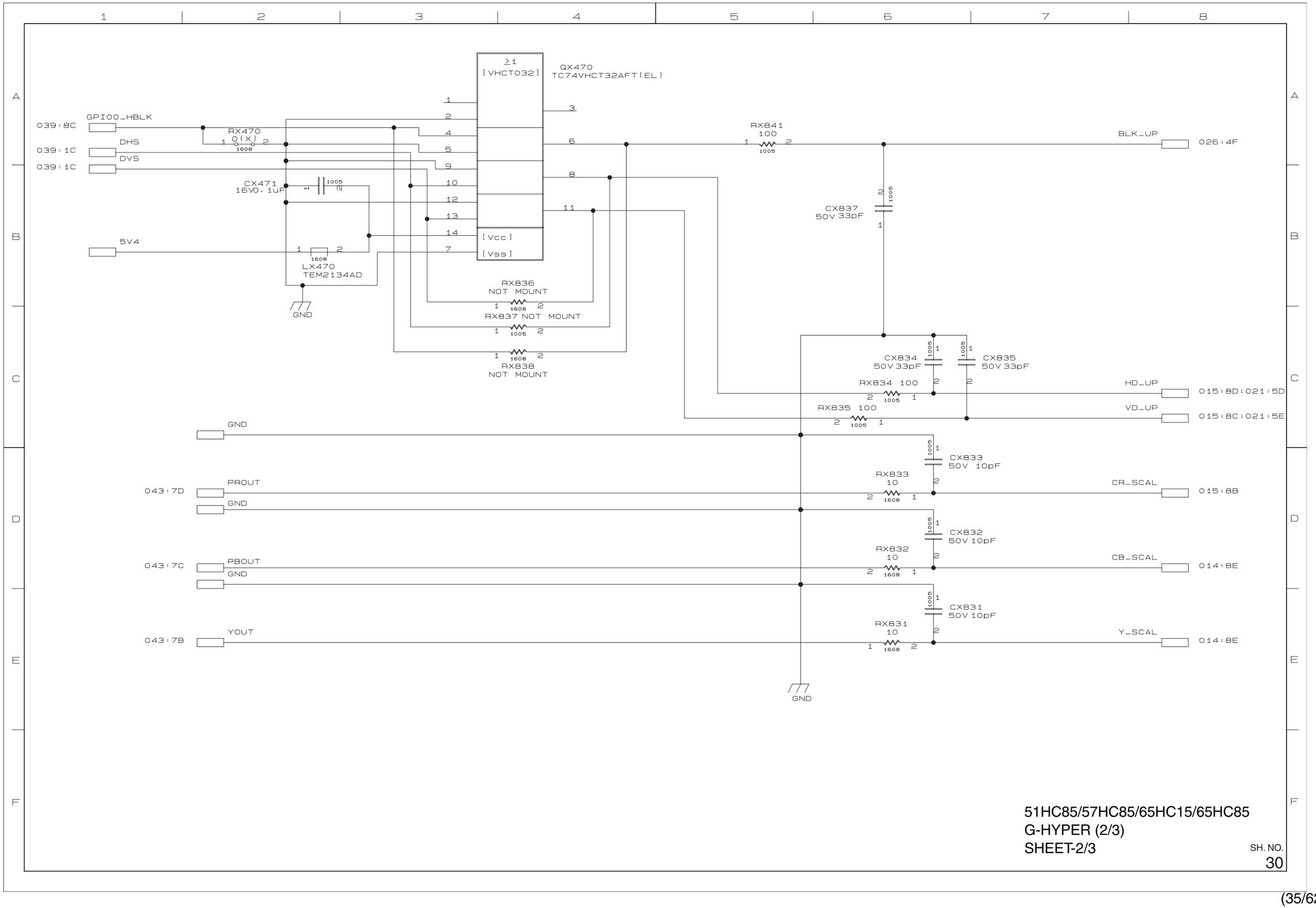


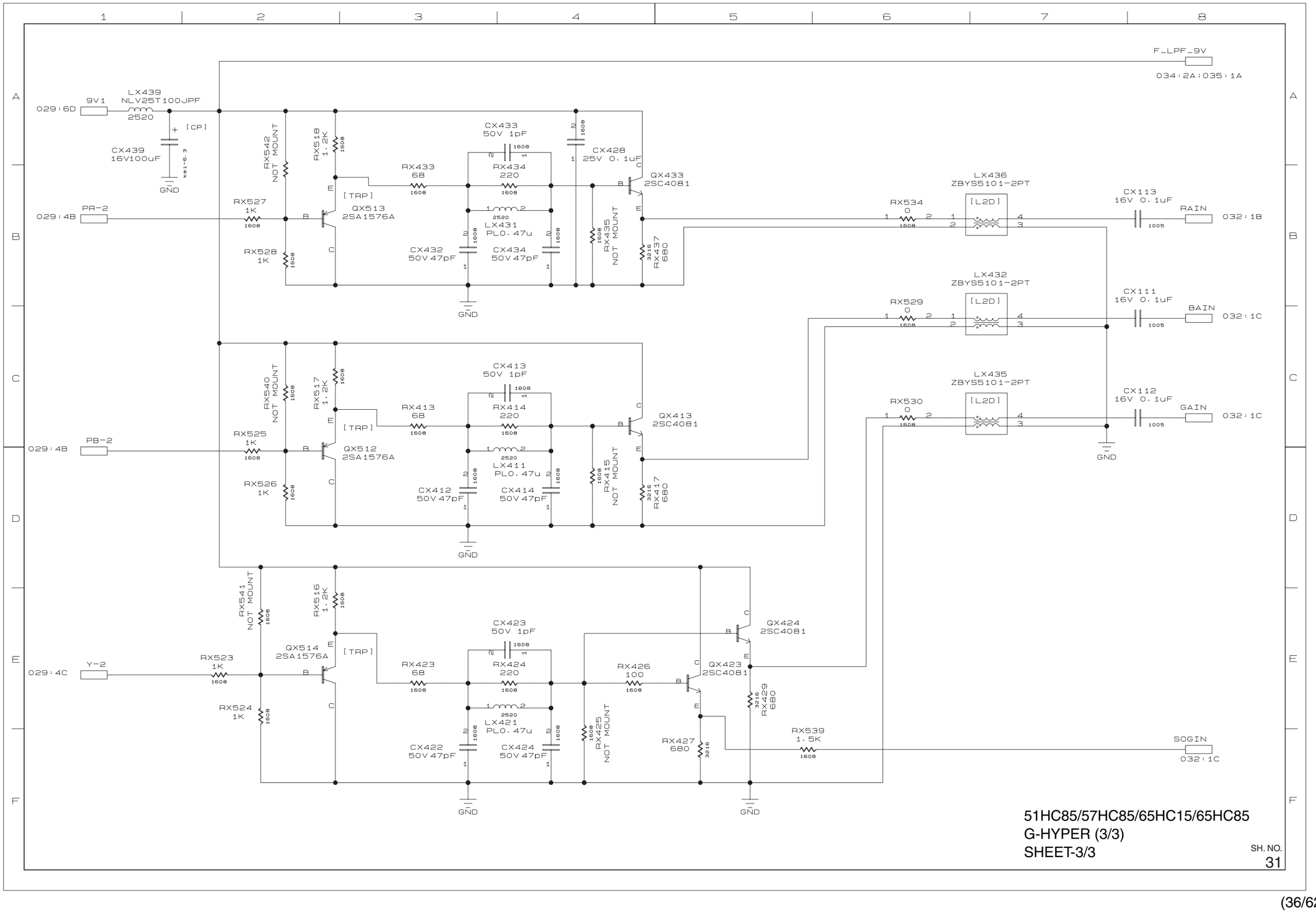

51HC85/57HC85/65HC15/65HC85
G-HYPER (1/3)
SHEET-1/3

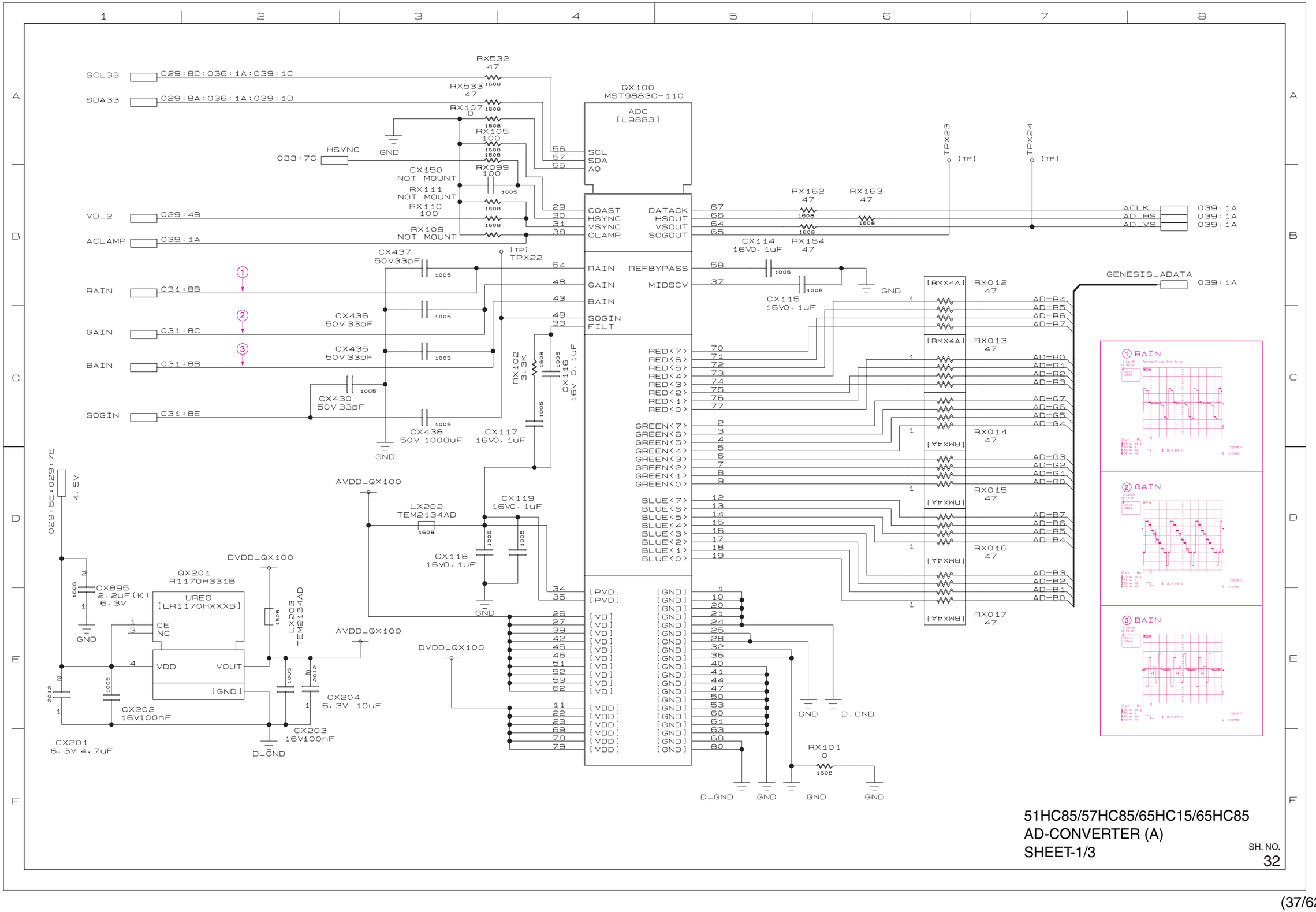
SH. NO.
29




51HC85/57HC85/65HC15/65HC85
G-HYPER (2/3)
SHEET-2/3

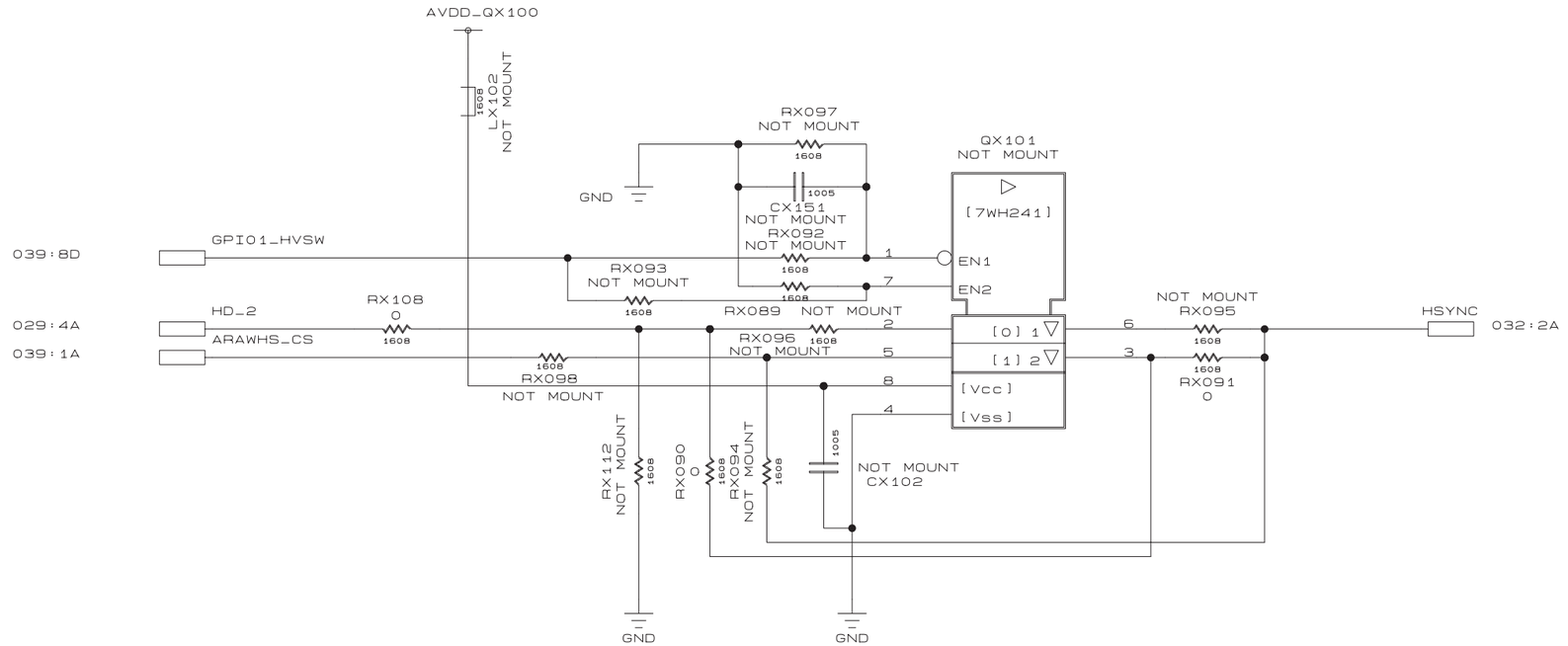
SH. NO.
30


F_LPF_9V
034:2A:035:1A
9V1
LX439
NLV25T100JPF
2520
029:6D
CX439
16V100uF
[CP]
GND
RX542
NOT MOUNT
RX518
1.2K
CX433
50V 1pF
CX428
25V 0.1uF
RX433
68
RX434
220
QX433
2SC4081
[TRP]
PR-2
029:4B
RX527
1K
QX513
2SA1576A
LX431
PLO.47u
RX528
1K
CX432
50V47pF
CX434
50V47pF
RX435
NOT MOUNT
RX437
680
LX436
ZBYS5101-2PT
[L2D]
RX534
0
CX113
16V 0.1uF
RAIN
032:1B
LX432
ZBYS5101-2PT
RX529
0
CX111
16V 0.1uF
BAIN
032:1C
LX435
ZBYS5101-2PT
RX530
0
CX112
16V 0.1uF
GAIN
032:1C
RX540
NOT MOUNT
RX517
1.2K
CX413
50V 1pF
RX413
68
RX414
220
QX413
2SC4081
[TRP]
PB-2
029:4B
RX525
1K
QX512
2SA1576A
LX411
PLO.47u
RX526
1K
CX412
50V47pF
CX414
50V47pF
RX415
NOT MOUNT
RX417
680
RX541
NOT MOUNT
RX516
1.2K
CX423
50V 1pF
QX424
2SC4081
Y-2
029:4C
RX523
1K
QX514
2SA1576A
[TRP]
RX423
68
RX424
220
RX426
100
QX423
2SC4081
RX524
1K
LX421
PLO.47u
CX422
50V47pF
CX424
50V47pF
RX425
NOT MOUNT
RX427
680
RX429
680
RX539
1.5K
SOGIN
032:1C
51HC85/57HC85/65HC15/65HC85
G-HYPER (3/3)
SHEET-3/3
SH. NO.
31

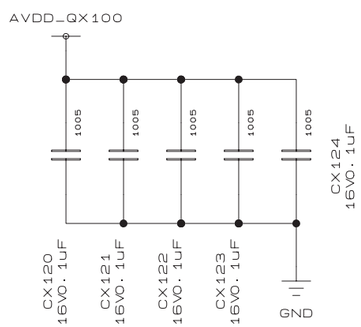



51HC85/57HC85/65HC15/65HC85
AD-CONVERTER (A)
SHEET-1/3

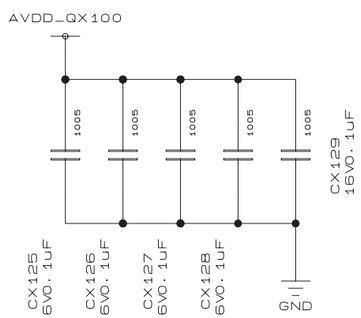
SH. NO.
32



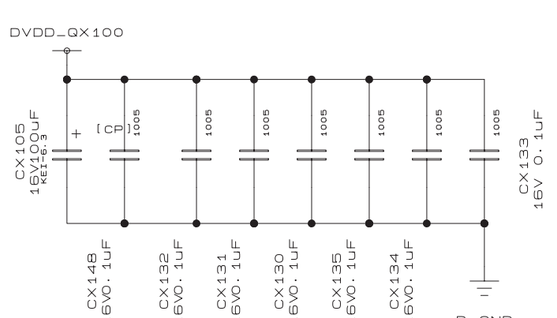

Capasitor for QX100




Capasitor for QX100

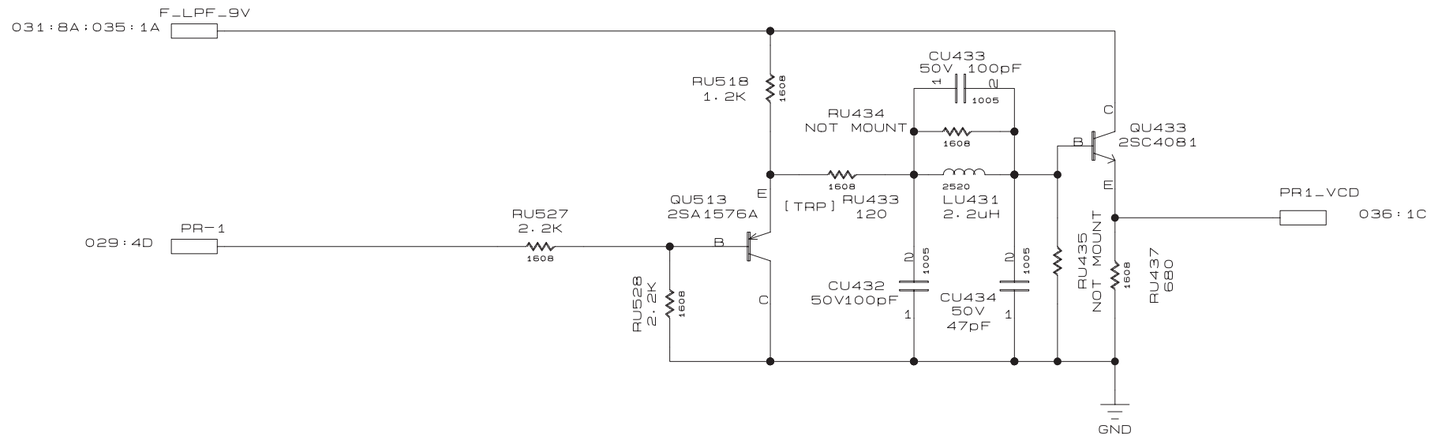



Capasitor for QX100



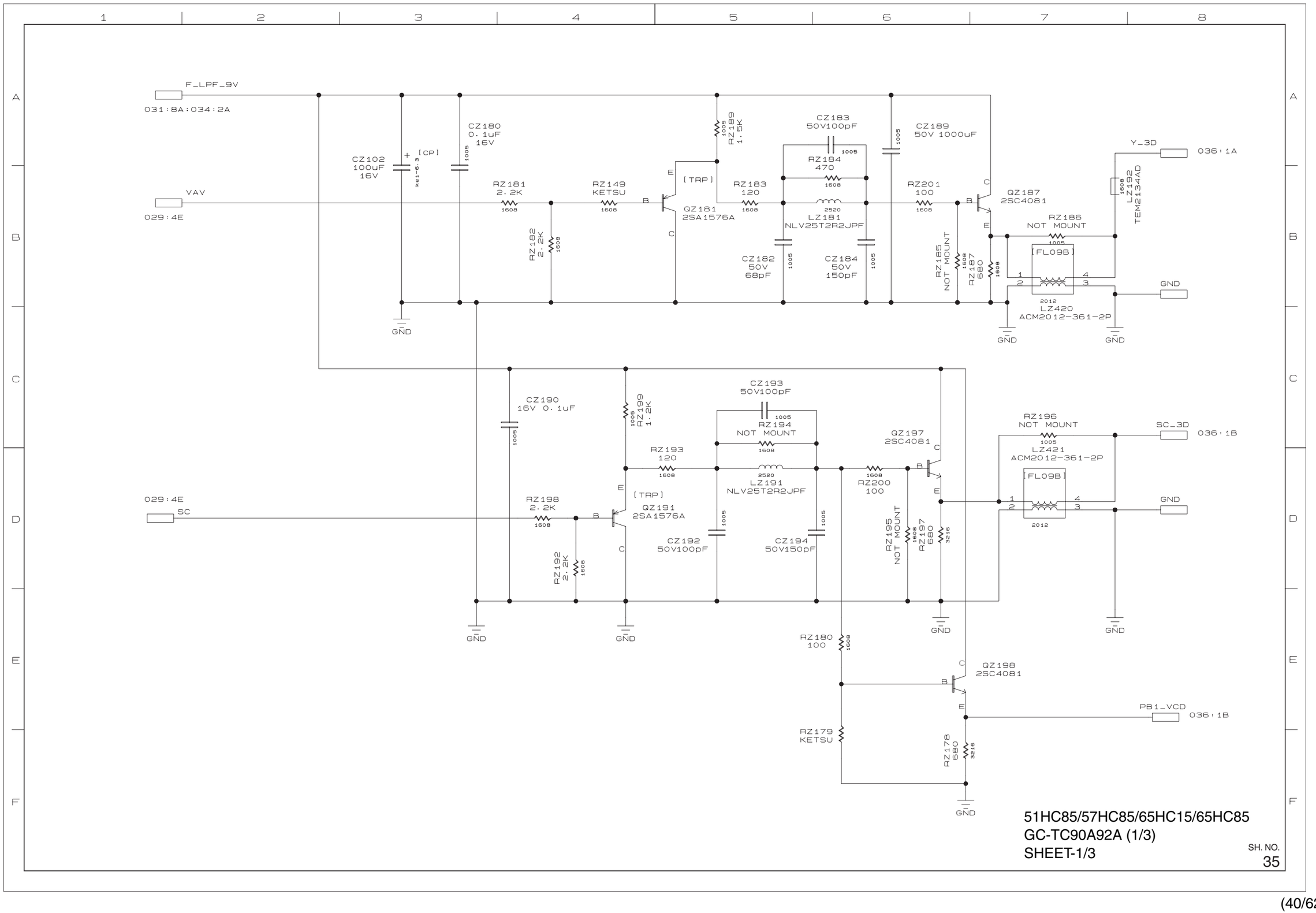

51HC85/57HC85/65HC15/65HC85
AD-CONVERTER (B)
SHEET-2/3

SH. NO.
33



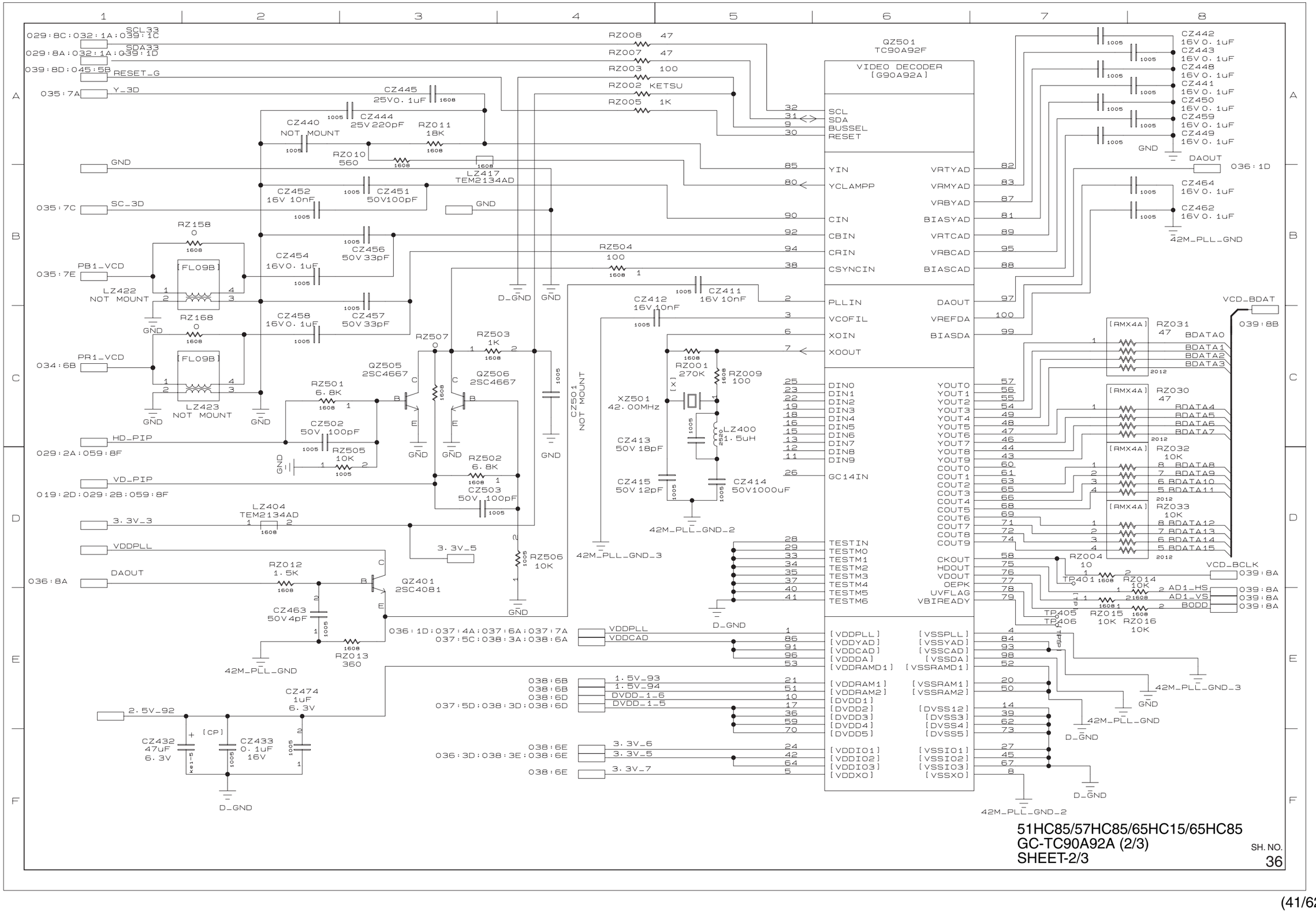

51HC85/57HC85/65HC15/65HC85
AD-CONVERTER (C)
SHEET-3/3

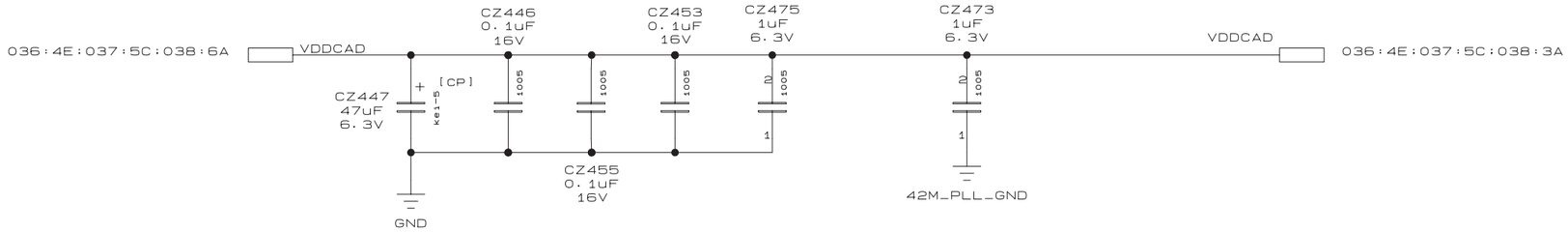
SH. NO.
34

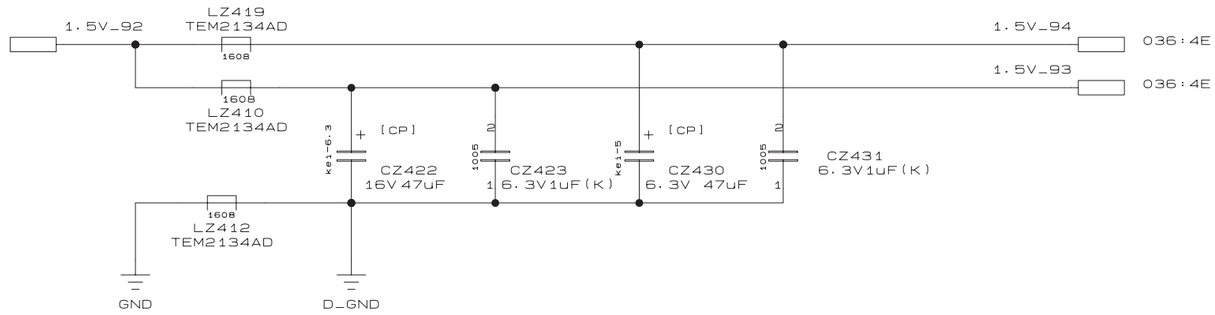


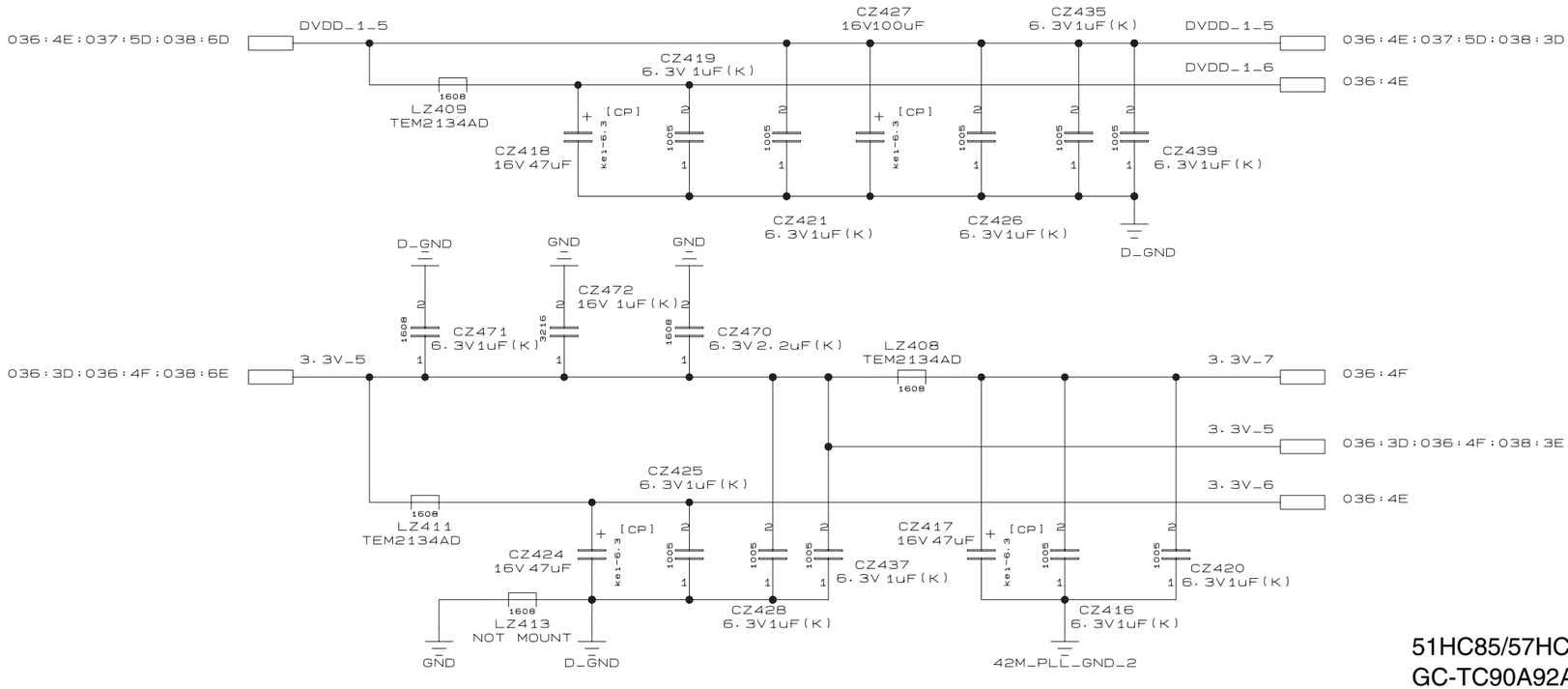

51HC85/57HC85/65HC15/65HC85
GC-TC90A92A (1/3)
SHEET-1/3

SH. NO.
35


QZ501
TC90A92F
VIDEO DECODER
[G90A92A]
SCL33
SDA33
RESET_G
Y_3D
SC_3D
PB1_VCD
PR1_VCD
HD_PIP
VD_PIP
DAOUT
VDDPLL
3.3V_3
3.3V_5
2.5V_92
D_GND
42M_PLL_GND
42M_PLL_GND_2
42M_PLL_GND_3
VCD_BDAT
VCD_BCLK
DAOUT
42M_PLL_GND
XZ501
42.00MHz
LZ400
1.5uH
LZ417
TEM2134AD
LZ404
TEM2134AD
QZ401
2SC4081
QZ505
2SC4667
QZ506
2SC4667
CZ501
NOT MOUNT
LZ422
NOT MOUNT
LZ423
NOT MOUNT
RZ008 47
RZ007 47
RZ003 100
RZ002 KETSU
RZ005 1K
RZ011 18K
RZ010 560
RZ158 0
RZ168 0
RZ507 0
RZ503 1K
RZ504 100
RZ001 270K
RZ009 100
RZ501 6.8K
RZ505 10K
RZ502 6.8K
RZ506 10K
RZ012 1.5K
RZ013 360
CZ445 25V0.1uF
CZ444 25V220pF
CZ440 NOT MOUNT
CZ452 16V 10nF
CZ451 50V100pF
CZ456 50V33pF
CZ454 16V0.1uF
CZ458 16V0.1uF
CZ457 50V33pF
CZ502 50V 100pF
CZ503 50V 100pF
CZ411 16V 10nF
CZ412 16V10nF
CZ413 50V 18pF
CZ415 50V 12pF
CZ414 50V1000uF
CZ463 50V4pF
CZ474 1uF 6.3V
CZ432 47uF 6.3V
CZ433 0.1uF 16V
CZ442 16V0.1uF
CZ443 16V0.1uF
CZ448 16V0.1uF
CZ441 16V0.1uF
CZ450 16V0.1uF
CZ459 16V0.1uF
CZ449 16V0.1uF
CZ454 16V0.1uF
CZ462 16V0.1uF
RZ031 47
RZ030 47
RZ032 10K
RZ033 10K
RZ004 10
RZ014 10K
RZ015 10K
RZ016 10K
TP401
TP405
TP406
SCL
SDA
BUSSEL
RESET
YIN
YCLAMPP
CIN
CBIN
CRIN
CSYNCIN
PLLIN
VCOFIL
XOIN
XOOUT
DIN0
DIN1
DIN2
DIN3
DIN4
DIN5
DIN6
DIN7
DIN8
DIN9
GC14IN
TESTIN
TESTM0
TESTM1
TESTM2
TESTM3
TESTM4
TESTM5
TESTM6
VRTYAD
VRMYAD
VRBYAD
BIASYAD
VRTCAD
VRBCAD
BIASCAD
DAOUT
VREFDA
BIASDA
YOUT0
YOUT1
YOUT2
YOUT3
YOUT4
YOUT5
YOUT6
YOUT7
YOUT8
YOUT9
COUT0
COUT1
COUT2
COUT3
COUT4
COUT5
COUT6
COUT7
COUT8
COUT9
CKOUT
HDOUT
VDOUT
OEPK
UVFLAG
VBIREADY
[VDDPLL]
[VDDYAD]
[VDDCAD]
[VDDDA]
[VDDRAMD1]
[VDDRAM1]
[VDDRAM2]
[DVDD1]
[DVDD2]
[DVDD3]
[DVDD4]
[DVDD5]
[VDDIO1]
[VDDIO2]
[VDDIO3]
[VDDXO]
[VSSPLL]
[VSSYAD]
[VSSCAD]
[VSSDA]
[VSSRAMD1]
[VSSRAM1]
[VSSRAM2]
[DVSS12]
[DVSS3]
[DVSS4]
[DVSS5]
[VSSIO1]
[VSSIO2]
[VSSIO3]
[VSSXO]
BDATA0
BDATA1
BDATA2
BDATA3
BDATA4
BDATA5
BDATA6
BDATA7
BDATA8
BDATA9
BDATA10
BDATA11
BDATA12
BDATA13
BDATA14
BDATA15
AD1_HS
AD1_VS
BODD
029:8C:032:1A:039:1C
029:8A:032:1A:039:1D
039:8D:045:5B
035:7A
035:7C
035:7E
034:6B
029:2A:059:8F
019:2D:029:2B:059:8F
036:8A
036:1D:037:4A:037:6A:037:7A
037:5C:038:3A:038:6A
038:6B
038:6B
038:6D
037:5D:038:3D:038:6D
038:6E
036:3D:038:3E:038:6E
038:6E
039:8B
039:8A
039:8A
039:8A
039:8A
1.5V_93
1.5V_94
DVDD_1_6
DVDD_1_5
3.3V_6
3.3V_5
3.3V_7
51HC85/57HC85/65HC15/65HC85
GC-TC90A92A (2/3)
SHEET-2/3
SH. NO.
36

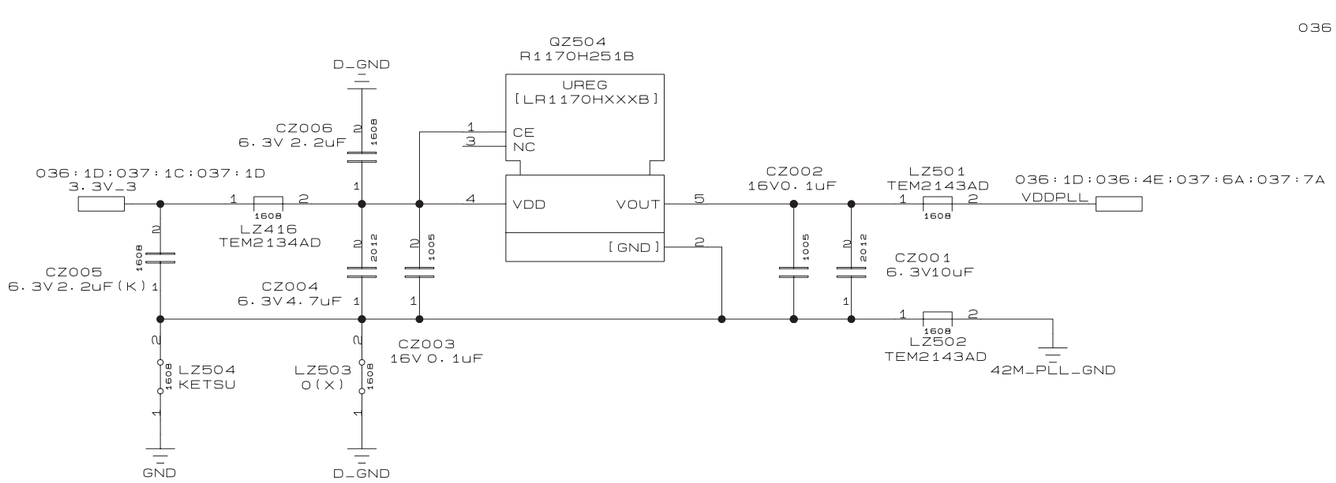


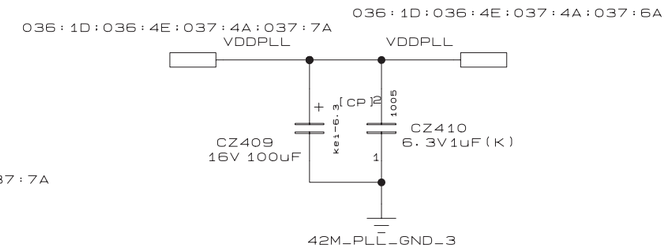



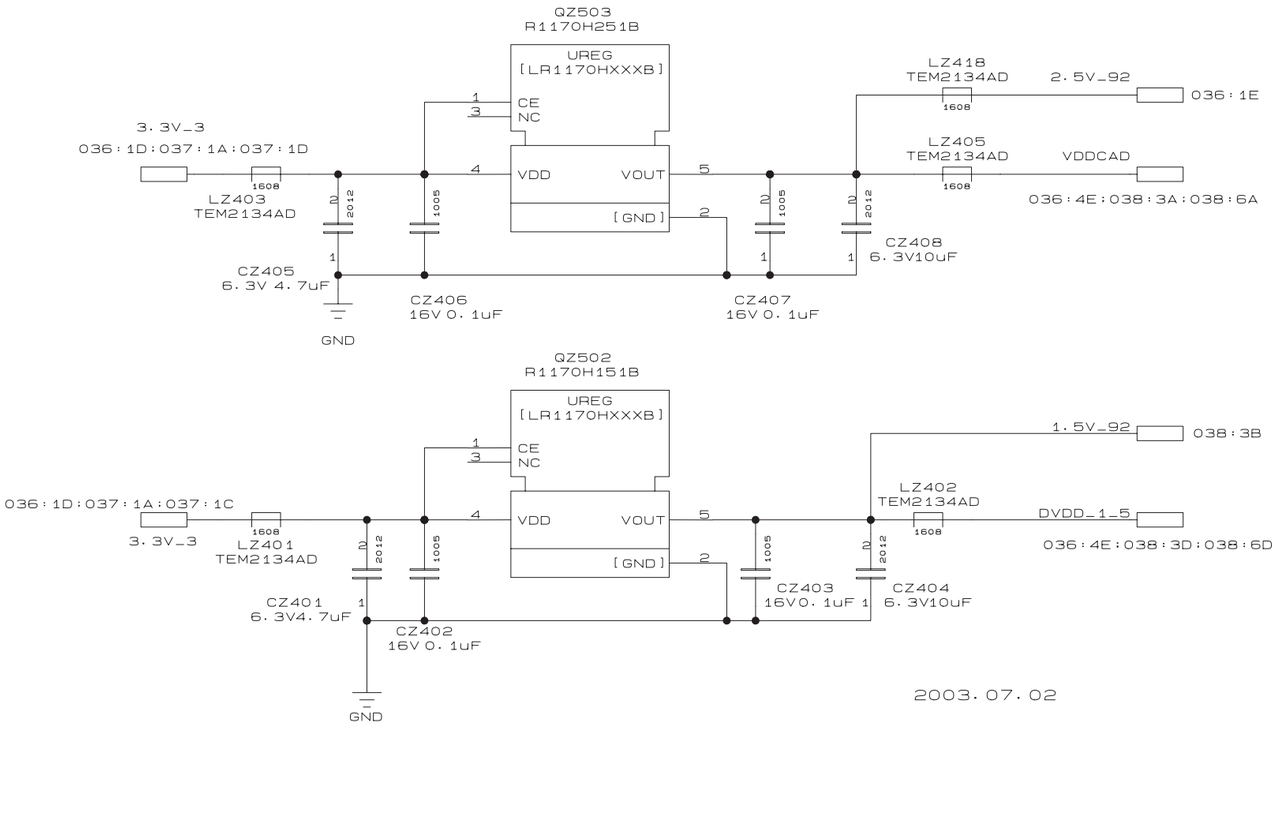



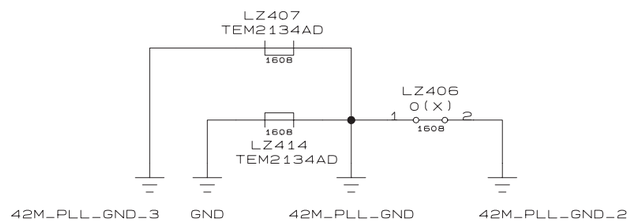

51HC85/57HC85/65HC15/65HC85
GC-TC90A92A (3/3)
SHEET-3/3

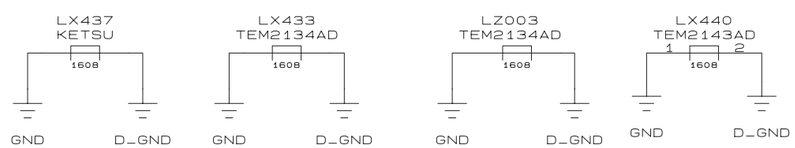
SH. NO.
38




2003.07.02

51HC85/57HC85/65HC15/65HC85
GC-REG

SH. NO.
37

GM6010 QX300

[G6010]

[INPUT]

| | | | |
|---|---|---|---|
| ACLK1 | 154 | BCLK1 | 7 |
| AODD | 155 | BODD | 8 |
| AVS | 156 | BVS | 9 |
| AHS_CS | 157 | BHS_CS | 10 |
| ASOY_G+ | 207 | BSOY_G+ | 204 |
| ASOY_G- | 206 | BSOY_G- | 205 |
| ARAWHS_CS | 158 | BRAWHS_CS | 13 |
| ACREF | 159 | BCREF | 14 |
| AHREF_DE | 160 | BHREF_DE | 15 |
| ADATA23 | | BDATA23 | 16 |
| ADATA22 | | BDATA22 | 18 |
| ADATA21 | | BDATA21 | 19 |
| ADATA20 | | BDATA20 | 20 |
| ADATA19 | | BDATA19 | 22 |
| ADATA18 | | BDATA18 | 23 |
| ADATA17 | | BDATA17 | 24 |
| ADATA16 | | BDATA16 | 25 |
| ADATA15 | | BDATA15 | 28 |
| ADATA14 | | BDATA14 | 29 |
| ADATA13 | | BDATA13 | 30 |
| ADATA12 | | BDATA12 | 31 |
| ADATA11 | | BDATA11 | 32 |
| ADATA10 | | BDATA10 | 34 |
| ADATA9 | | BDATA9 | 35 |
| ADATA8 | | BDATA8 | 36 |
| ADATA7 | | BDATA7 | 37 |
| ADATA6 | | BDATA6 | 38 |
| ADATA5 | | BDATA5 | 39 |
| ADATA4 | | BDATA4 | 42 |
| ADATA3 | | BDATA3 | 43 |
| ADATA2 | | BDATA2 | 44 |
| ADATA1 | | BDATA1 | 45 |
| ADATA0 | | BDATA0 | 46 |

[ANALOG_DIS.]

| | | | |
|---|---|---|---|
| IOG_Y | | | |
| /IOG_Y | | RSET | 74 |
| IOB_Pb | | | |
| /IOB_Pb | | COMP | 75 |
| IOR_Pr | | | |
| /IOR_Pr | | VREF | 76 |

[DISP CONT.]

| | | | |
|---|---|---|---|
| DHS_CS | | DODD | 53 |
| DVS | | | |
| DDE_BLANK | | DCLK | 54 |

[HOST INTER.]

| | | | |
|---|---|---|---|
| SCLK | | /SCS | 3 |
| | | /RESET | 5 |
| SDATA | | /IRQ | 6 |

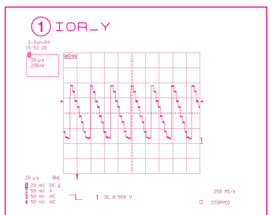
[PLL/DDS]

| | | | |
|---|---|---|---|
| XTAL | | GPIO1 | 47 |
| TCLK | | GPIO2 | 48 |
| NC | 62 | NC | 79 |

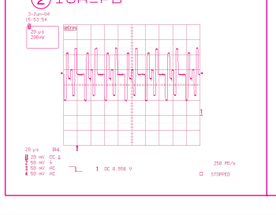
| | | | |
|---|---|---|---|
| AVDD_CSS | 208 | AVSS_CSS | 203 |
| AVDD_RPLL | 200 | AVSS_RPLL | 199 |
| AVDD_MPLL | 198 | AVSS_MPLL | 197 |
| AVDD_DDS | 194 | AVSS_DDS | 193 |
| VDD_PLL | 196 | VSS_PLL | 195 |
| VDD_DDS | 192 | VSS_DDS | 191 |
| VDD_DAC | 64 | VSS_DAC | 63 |
| AVDD_DAC | 67 | AVSS_DAC | 77 |
| AVDD_DAC | 70 | AVSS_DAC | 78 |
| AVDD_DAC | 73 | | |
| | | VSS | 1 |
| VDD(3.3V) | 21 | VSS | 11 |
| VDD(3.3V) | 51 | VSS | 17 |
| VDD(3.3V) | 162 | VSS | 26 |
| | | VSS | 33 |
| CVDD(2.5V) | 12 | VSS | 40 |
| CVDD(2.5V) | 27 | VSS | 56 |
| CVDD(2.5V) | 41 | VSS | 57 |
| CVDD(2.5V) | 55 | VSS | 59 |
| CVDD(2.5V) | 58 | VSS | 60 |
| CVDD(2.5V) | 61 | VSS | 81 |
| CVDD(2.5V) | 80 | VSS | 82 |
| CVDD(2.5V) | 83 | VSS | 84 |
| CVDD(2.5V) | 167 | VSS | 161 |
| CVDD(2.5V) | 185 | VSS | 166 |
| | | VSS | 184 |

032:7B ACLK
032:1B ACLAMP
032:7B AD_VS
032:7B AD_HS
033:2C ARAWHS_CS
043:2A ACREF
032:7B GENESIS_ADATA
AD-G7 AD-G6 AD-G5 AD-G4 AD-G3 AD-G2 AD-G1 AD-G0 AD-B7 AD-B6 AD-B5 AD-B4 AD-B3 AD-B2 AD-B1 AD-B0 AD-R7 AD-R6 AD-R5 AD-R4 AD-R3 AD-R2 AD-R1 AD-R0
043:2B IOR_Y
043:2C IOR_Y-1
043:2C IOR_PB
043:2D IOR_PB-1
043:2E IOR_PR
043:2E IOR_PR-1
030:2A DHS
030:2B DVS
[TP] TPX02
SCL33
SDA33
029:8A:032:1A:036:1A
+3.3V
CSS_3.3V
D_GND
RX500 10K(J) 1608
RX581 330K 1608
RX503 56 1608
RX502 56 1608
RX501 56 1608
DAC_GND
RX313 47 [RMX4A] 2010
LX906 0(X) 1608
LX904 0(X) 1608
RX504 47 1608
RX505 47 1608
RX512 NOT MOUNT 1608
CX500 50V22pF 1608
X500 14.32MHz [X] 1005
CX533 50V22pF 1608
AVDD_3.3
CSS_3.3V
PLL_GND
RX513 3.3K 1608
DACVDD_3.3
DAC_2.5
+3.3V
CVDD_2.5
RX582 330K 1608
RX021 10K 1608
RX020 47 1608
RX022 KETSU 1608
RX023 KETSU 1608
RX024 KETSU 1608
RX002 NOT MOUNT 1608
BODD 036:8D
AD1_VS 036:8D
AD1_HS 036:8D
VCD_BCLK 036:8D
VCD_BDAT 036:8B
RX506 1.5K 1608
RX607 220 1608
CX501 16V 0.1uF 1005
DACVDD_3.3
DAC_GND
TPX01
TPX04
[TP]
[RMX4A] RX314 KETSU 2010
GPI00_HBLK 030:2A
GPI01_HVSW 033:2B
RX578 47K 1608
RESET_G 036:1A:045:5B
RX507 1K 1608
IRQ_1 019:1C
CX932 KETSU 1608
CX934 KETSU 1608
CX933 KETSU 1608
GND
PLL_GND
DAC_GND

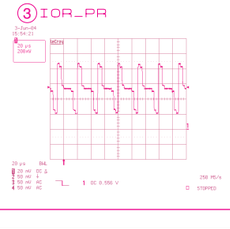
① IOR_Y



② IOR_PB



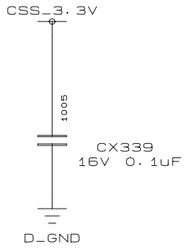
③ IOR_PR

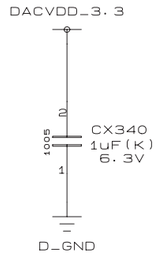


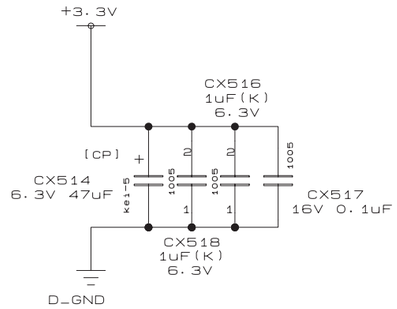
51HC85/57HC85/65HC15/65HC85
GNESIS (1/3)
SHEET-1/3

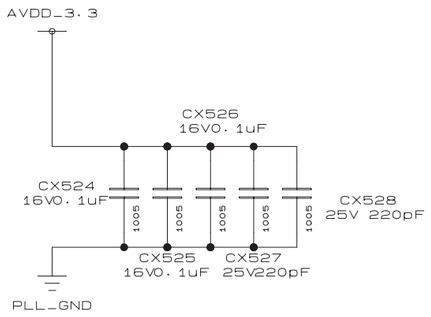
SH. NO.
39

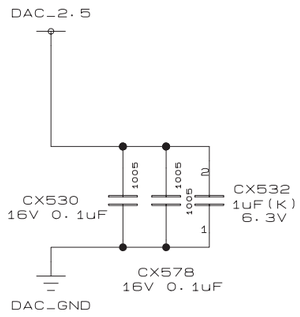
# Capasitor for QX300

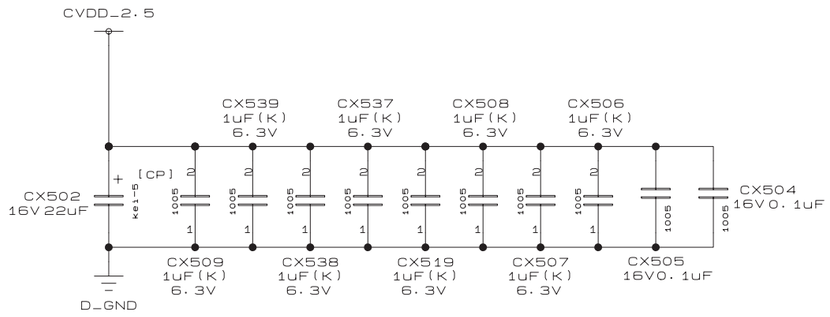


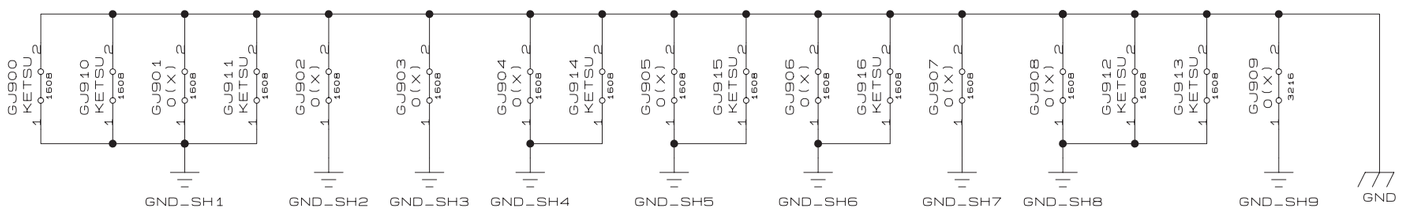



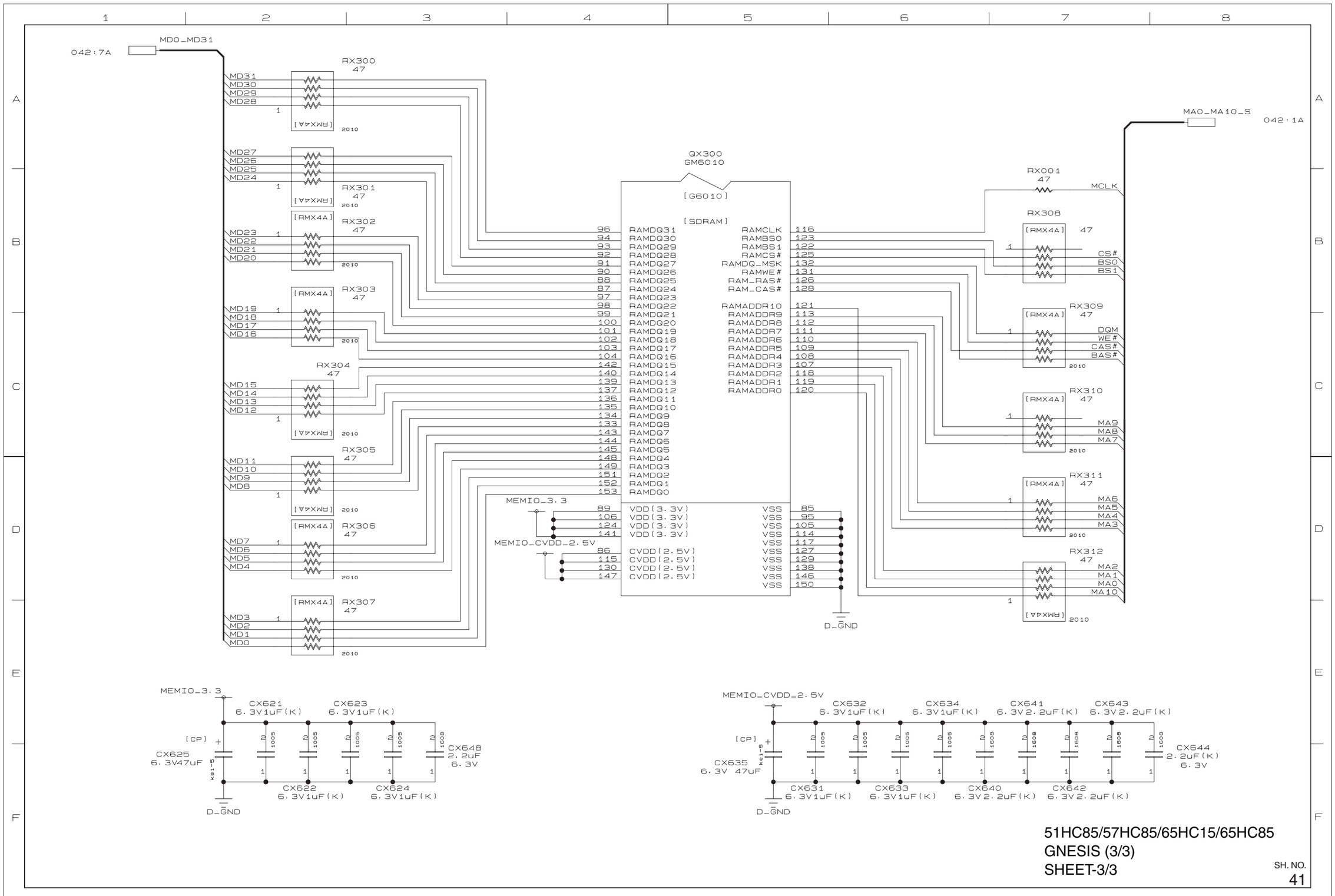




# CHASSIS for GND JUMPER



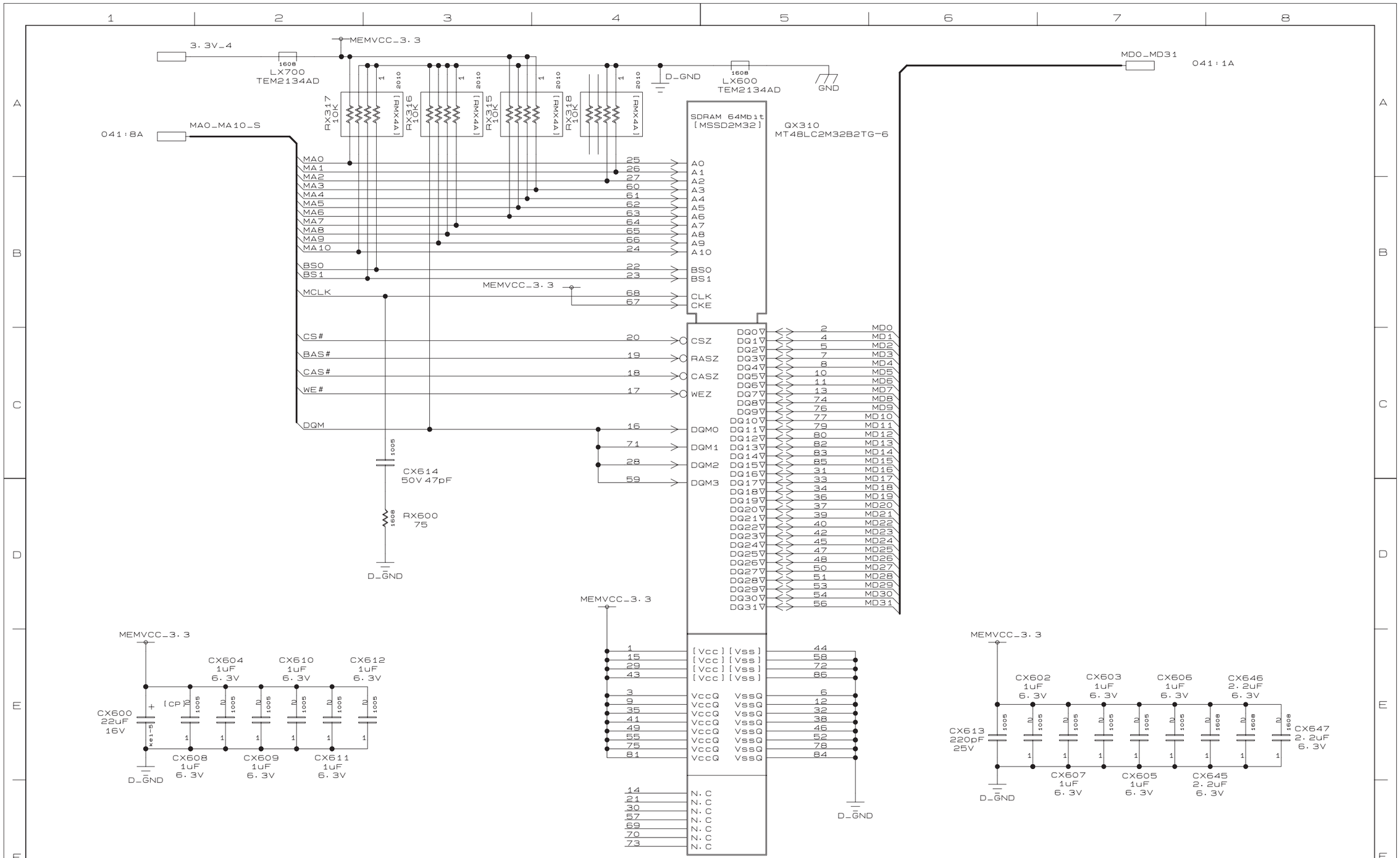

51HC85/57HC85/65HC15/65HC85
GNESIS (2/3)
SHEET-2/3

SH. NO.
40



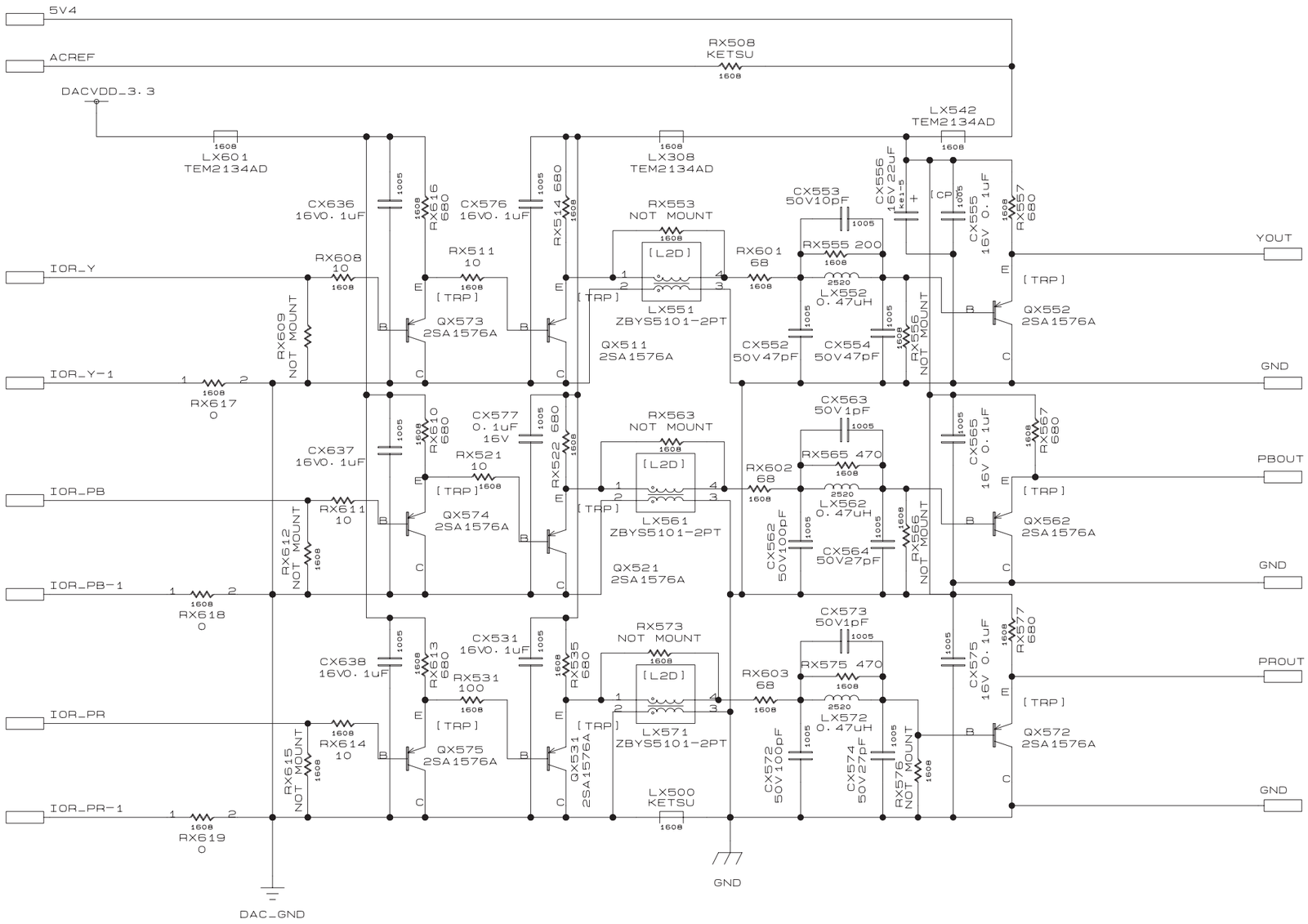

51HC85/57HC85/65HC15/65HC85
GNESIS (3/3)
SHEET-3/3

SH. NO.
41



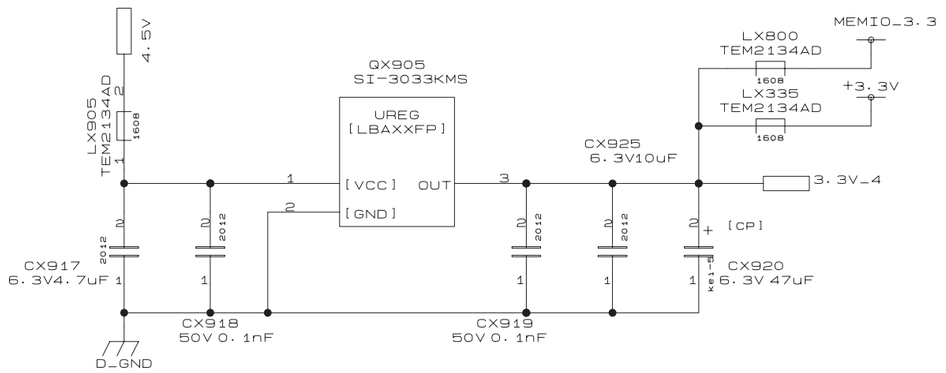

51HC85/57HC85/65HC15/65HC85
SDRAM

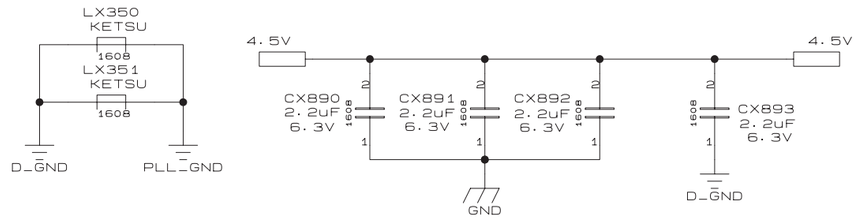
SH. NO.
42

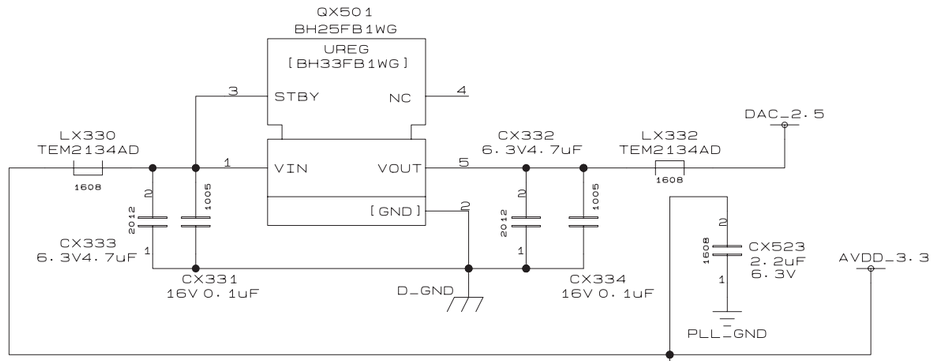


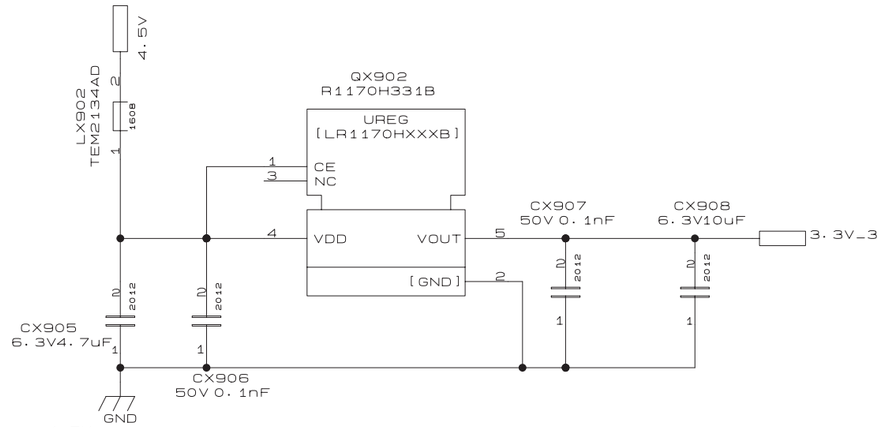

51HC85/57HC85/65HC15/65HC85
GNESIS OUT

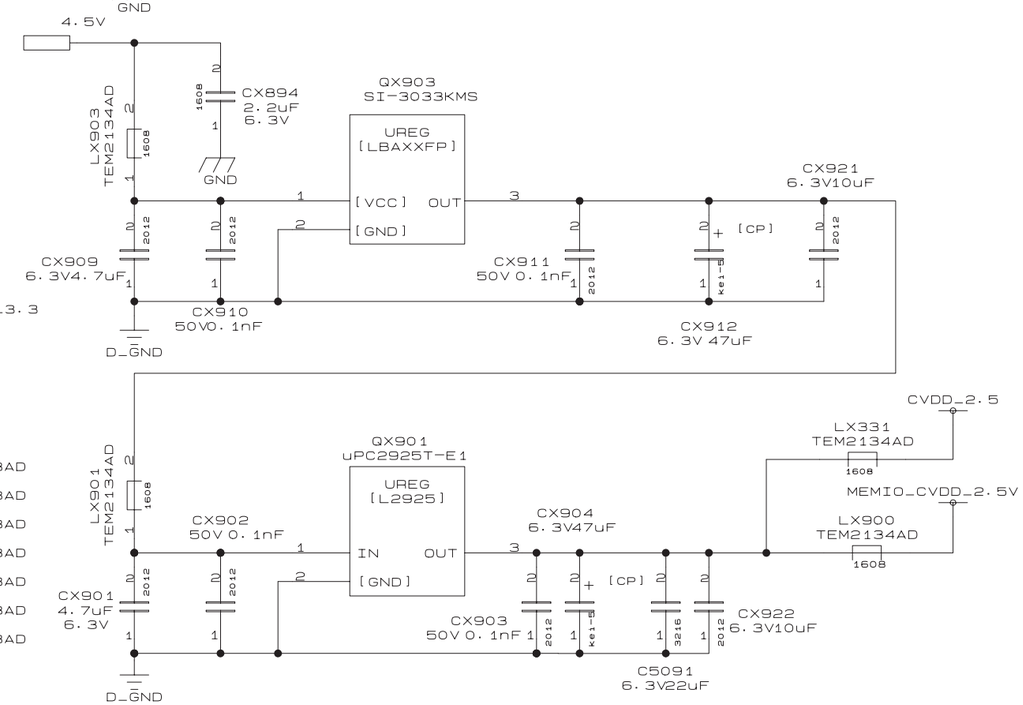
SH. NO.
43

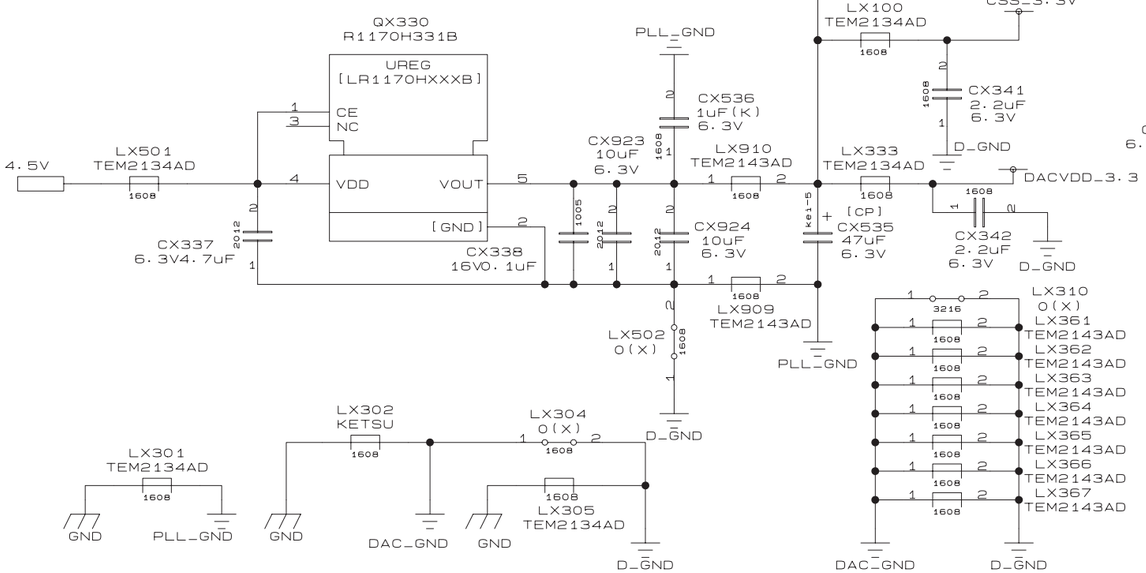


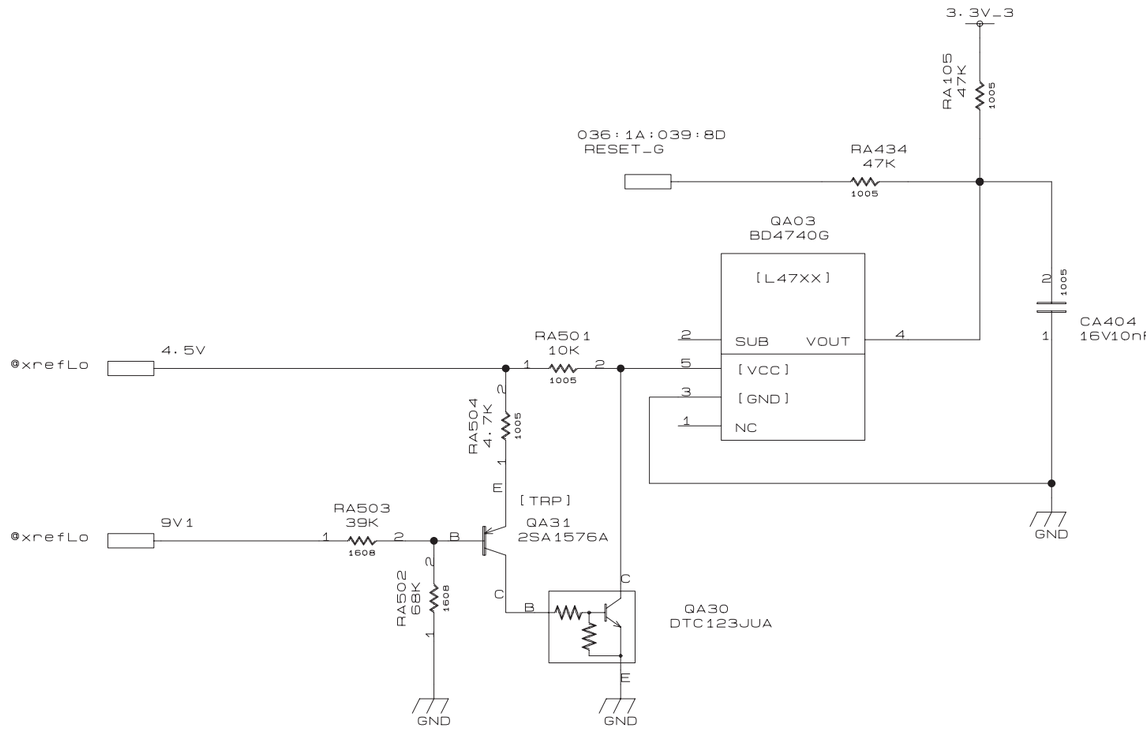



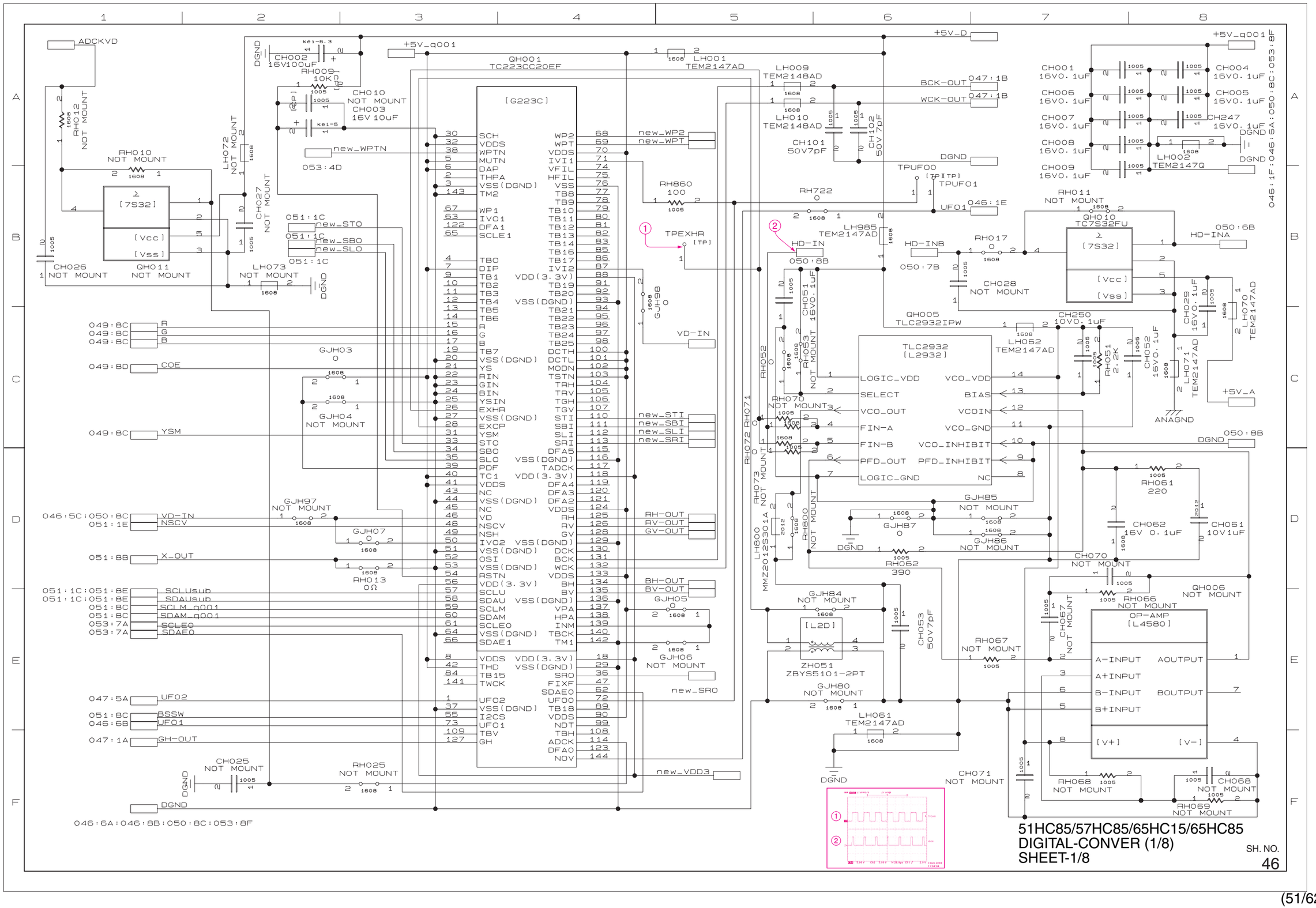

51HC85/57HC85/65HC15/65HC85
GNESIS REG

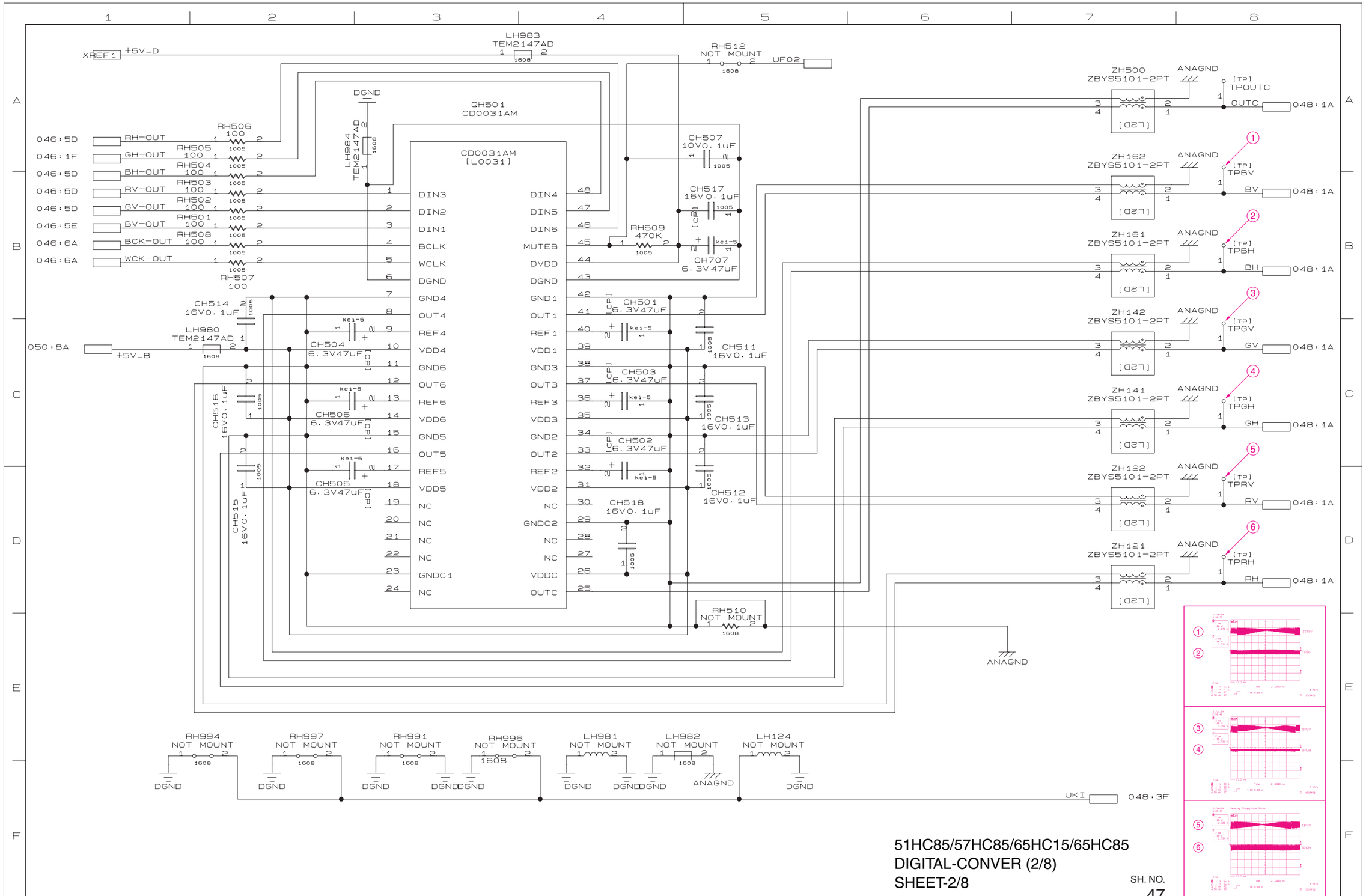
SH. NO.
44

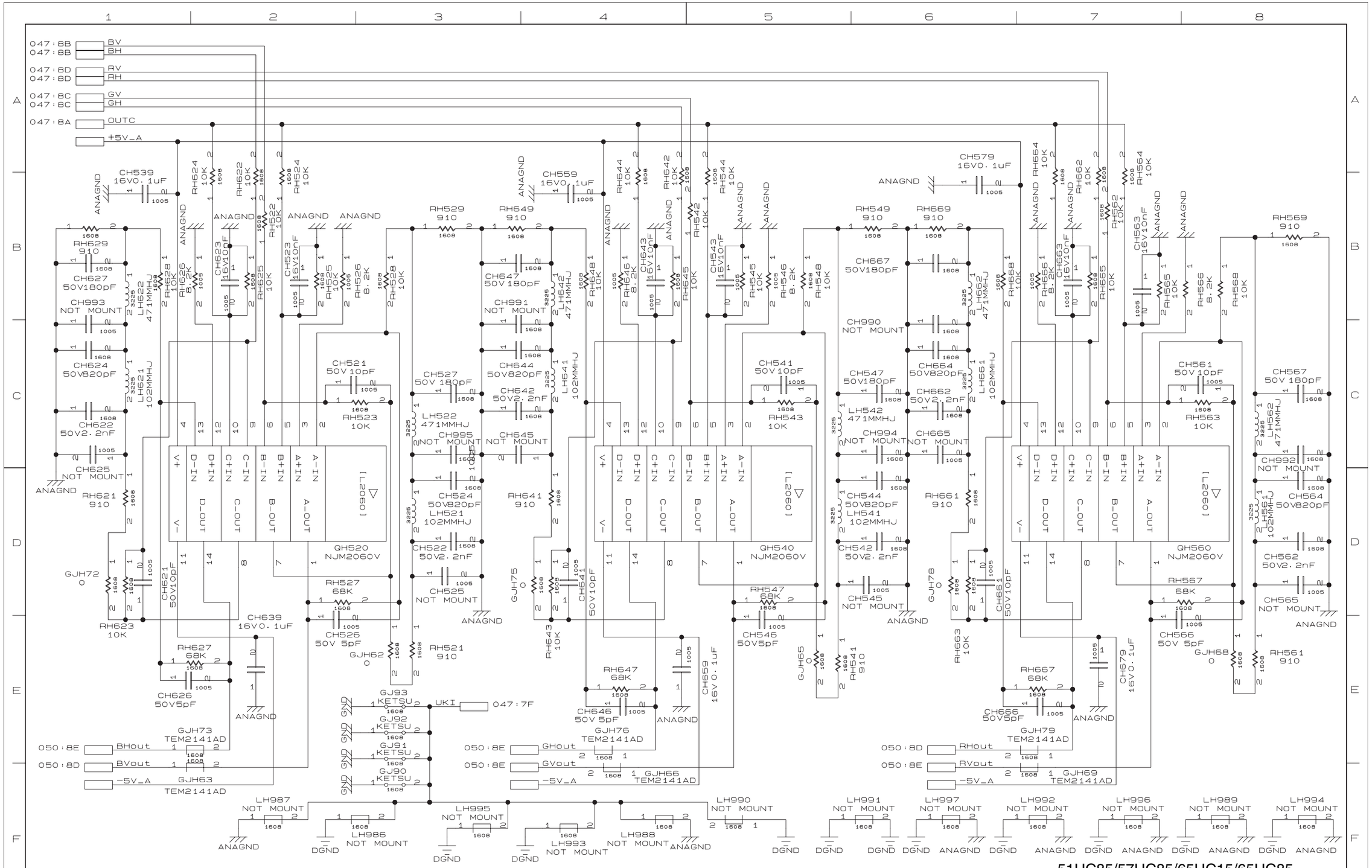



51HC85/57HC85/65HC15/65HC85
CPU

SH. NO.
45

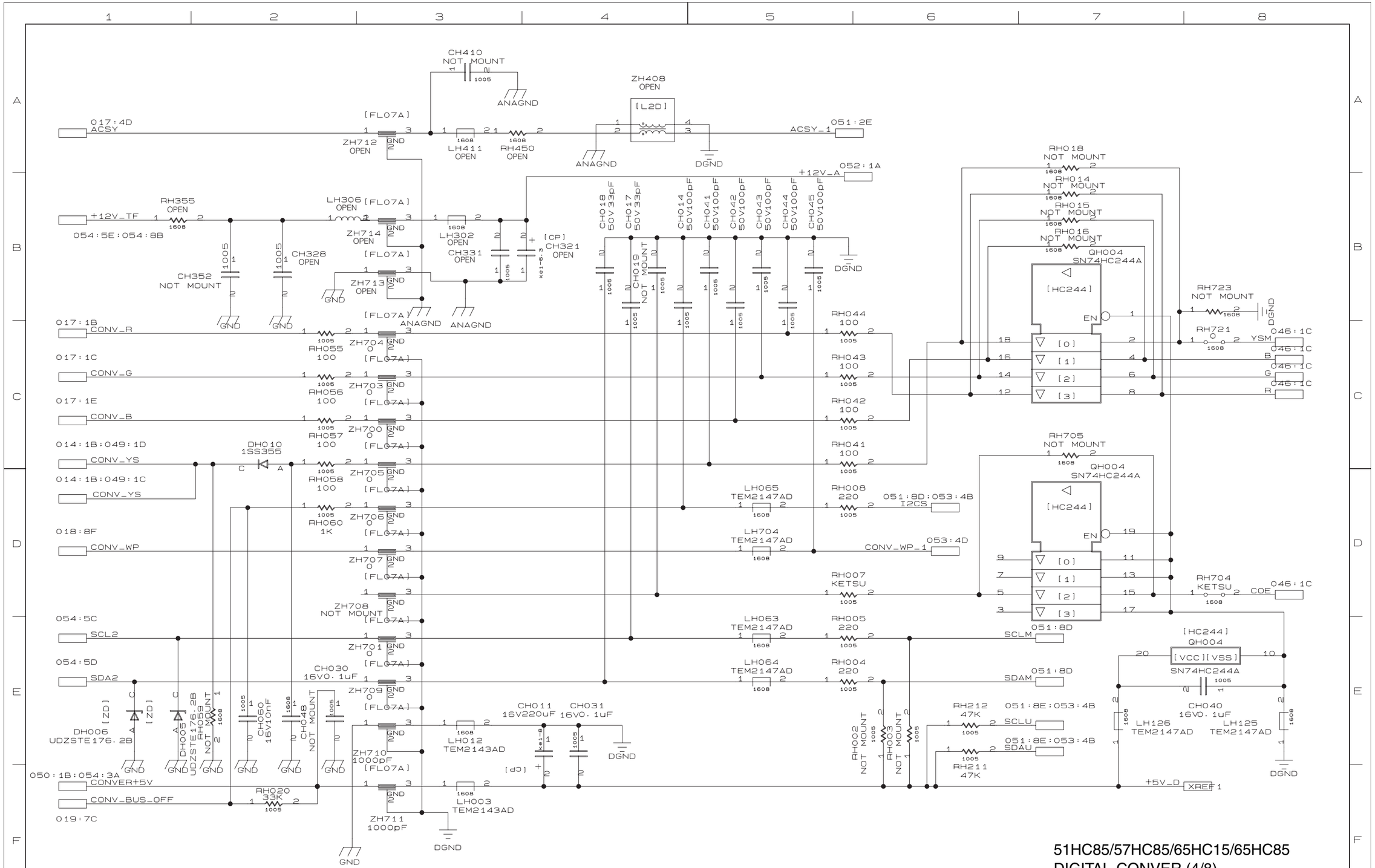

ADCKVD
RH012 NOT MOUNT
RH010 NOT MOUNT
[7S32]
[Vcc]
[Vss]
CH026 NOT MOUNT
QH011 NOT MOUNT
LH072 NOT MOUNT
CH027 NOT MOUNT
LH073 NOT MOUNT
DGND
CH002 16V100uF
RH009 10K0
CH010 NOT MOUNT
CH003 16V 10uF
new_WPTN
053:4D
051:1C new_STO
051:1C new_SBO
new_SLO
051:1C
049:8C R
049:8C G
049:8C B
GJH03 0
049:8D COE
GJH04 NOT MOUNT
049:8C YSM
+5V_q001
QH001 TC223CC20EF
[G223C]
SCH WP2
VDDS WPT
WPTN VDDS
MUTN IVI1
DAP VFIL
THPA HFIL
VSS(DGND) VSS
TM2 TB8
TB9
WP1 TB10
IVO1 TB11
DFA1 TB12
SCLE1 TB13
TB14
TB16
TBO TB17
DIP IVI2
TB1 VDD(3.3V)
TB2 TB19
TB3 TB20
TB4 VSS(DGND)
TB5 TB21
TB6 TB22
R TB23
G TB24
B TB25
TB7 DCTH
VSS(DGND) DCTL
YS MODN
RIN TSTN
GIN TRH
BIN TRV
YSIN TGH
EXHR TGV
VSS(DGND) STI
EXCP SBI
YSM SLI
STO SRI
SBO DFA5
SLO VSS(DGND)
PDF TADCK
TC1 VDD(3.3V)
VDDS DFA4
NC DFA3
VSS(DGND) DFA2
NC VDDS
VD RH
NSCV RV
NSH GV
IVO2 VSS(DGND)
VSS(DGND) DCK
OSI BCK
VSS(DGND) WCK
RSTN VDDS
VDD(3.3V) BH
SCLU BV
SDAU VSS(DGND)
SCLM VPA
SDAM HPA
SCLEO INM
VSS(DGND) TBCK
SDAE1 TM1
VDDS VDD(3.3V)
THD VSS(DGND)
TB15 SRO
TWCK FIXF
SDAEO
UF02 UF00
VSS(DGND) TB18
I2CS VDDS
UFO1 NDT
TBV TBH
GH ADCK
DFAO
NOV
new_WP2
new_WPT
new_STI
new_SBI
new_SLI
new_SRI
RH-OUT
RV-OUT
GV-OUT
BH-OUT
BV-OUT
new_SRO
new_VDD3
LH001 TEM2147AD
RH860 100
TPEXHR [TP]
GJH98 0
VD-IN
GJH05 0
GJH06 NOT MOUNT
046:5C:050:8C VD-IN
051:1E NSCV
GJH97 NOT MOUNT
GJH07 0
051:8B X_OUT
RH013 0Ω
051:1C:051:8E SCLUsub
051:1C:051:8E SDAUsub
051:8C SCLM_g001
051:8C SDAM_g001
053:7A SCLEO
053:7A SDAEO
047:5A UF02
051:8C BSSW
046:6B UFO1
047:1A GH-OUT
CH025 NOT MOUNT
RH025 NOT MOUNT
DGND
046:6A:046:8B:050:8C:053:8F
LH009 TEM2148AD
LH010 TEM2148AD
CH101 50V7pF
CH102 50V 7pF
+5V_D
BCK-OUT 047:1B
WCK-OUT 047:1B
TPUF00
TPUF01
UFO1 046:1E
RH722 0
LH985 TEM2147AD
HD-IN 050:8B
HD-INB 050:7B
RH017 0
CH028 NOT MOUNT
QH005 TLC2932IPW
TLC2932 [L2932]
LOGIC_VDD
SELECT
VCO_OUT
FIN-A
FIN-B
PFD_OUT
LOGIC_GND
VCO_VDD
BIAS
VCOIN
VCO_GND
VCO_INHIBIT
PFD_INHIBIT
NC
LH062 TEM2147AD
CH250 10V0.1uF
RH051 2.2K
CH052 16V0.1uF
RH052 0
CH051 16V0.1uF
RH053 NOT MOUNT
RH070 NOT MOUNT
RH072 0
RH071 NOT MOUNT
RH073 NOT MOUNT
LH800 MMZ2012S301A
RH800 NOT MOUNT
GJH84 NOT MOUNT
[L2D]
ZH051 ZBYS5101-2PT
CH053 50V7pF
GJH80 NOT MOUNT
LH061 TEM2147AD
DGND
CH071 NOT MOUNT
GJH85 NOT MOUNT
GJH87 0
GJH86 NOT MOUNT
RH062 390
RH061 220
CH062 16V 0.1uF
CH061 10V1uF
CH070 NOT MOUNT
QH006 NOT MOUNT
RH066 NOT MOUNT
CH067 NOT MOUNT
OP-AMP [L4580]
A-INPUT
A+INPUT
B-INPUT
B+INPUT
AOUTPUT
BOUTPUT
[V+]
[V-]
RH067 NOT MOUNT
RH068 NOT MOUNT
CH068 NOT MOUNT
RH069 NOT MOUNT
+5V_q001
CH001 16V0.1uF
CH004 16V0.1uF
CH006 16V0.1uF
CH005 16V0.1uF
CH007 16V0.1uF
CH247 16V0.1uF
CH008 16V0.1uF
CH009 16V0.1uF
LH002 TEM2147Q
DGND
RH011 NOT MOUNT
QH010 TC7S32FU
[7S32]
[Vcc]
[Vss]
050:6B HD-INA
CH029 16V0.1uF
LH070 TEM2147AD
LH071 TEM2147AD
+5V_A
ANAGND
050:8B
DGND
046:1F:046:6A:050:8C:053:8F
51HC85/57HC85/65HC15/65HC85
DIGITAL-CONVER (1/8)
SHEET-1/8
SH. NO.
46


XREF1
+5V_D
LH983 TEM2147AD
RH512 NOT MOUNT
UF02
DGND
QH501 CD0031AM
LH984 TEM2147AD
RH506 100
RH505 100
RH504 100
RH503 100
RH502 100
RH501 100
RH508 100
RH507 100
046:5D RH-OUT
046:1F GH-OUT
046:5D BH-OUT
046:5D RV-OUT
046:5D GV-OUT
046:5E BV-OUT
046:6A BCK-OUT
046:6A WCK-OUT
CD0031AM [L0031]
DIN3 DIN2 DIN1 BCLK WCLK DGND GND4 OUT4 REF4 VDD4 GND6 OUT6 REF6 VDD6 GND5 OUT5 REF5 VDD5 NC NC NC NC GNDC1 NC
DIN4 DIN5 DIN6 MUTEB DVDD DGND GND1 OUT1 REF1 VDD1 GND3 OUT3 REF3 VDD3 GND2 OUT2 REF2 VDD2 NC GNDC2 NC NC VDDC OUTC
CH507 10V0.1uF
CH517 16V0.1uF
CH707 6.3V47uF
RH509 470K
CH501 6.3V47uF
CH503 6.3V47uF
CH502 6.3V47uF
CH504 6.3V47uF
CH506 6.3V47uF
CH505 6.3V47uF
CH514 16V0.1uF
CH516 16V0.1uF
CH515 16V0.1uF
CH511 16V0.1uF
CH513 16V0.1uF
CH512 16V0.1uF
CH518 16V0.1uF
RH510 NOT MOUNT
LH980 TEM2147AD
050:8A +5V_B
ANAGND
ZH500 ZBYS5101-2PT
ZH162 ZBYS5101-2PT
ZH161 ZBYS5101-2PT
ZH142 ZBYS5101-2PT
ZH141 ZBYS5101-2PT
ZH122 ZBYS5101-2PT
ZH121 ZBYS5101-2PT
[TP] TPOUTC OUTC 048:1A
[TP] TPBV BV 048:1A
[TP] TPBH BH 048:1A
[TP] TPGV GV 048:1A
[TP] TPGH GH 048:1A
[TP] TPRV RV 048:1A
[TP] TPRH RH 048:1A
[027]
RH994 NOT MOUNT
RH997 NOT MOUNT
RH991 NOT MOUNT
RH996 NOT MOUNT
LH981 NOT MOUNT
LH982 NOT MOUNT
LH124 NOT MOUNT
UKI 048:3F
51HC85/57HC85/65HC15/65HC85
DIGITAL-CONVER (2/8)
SHEET-2/8
SH. NO.
47



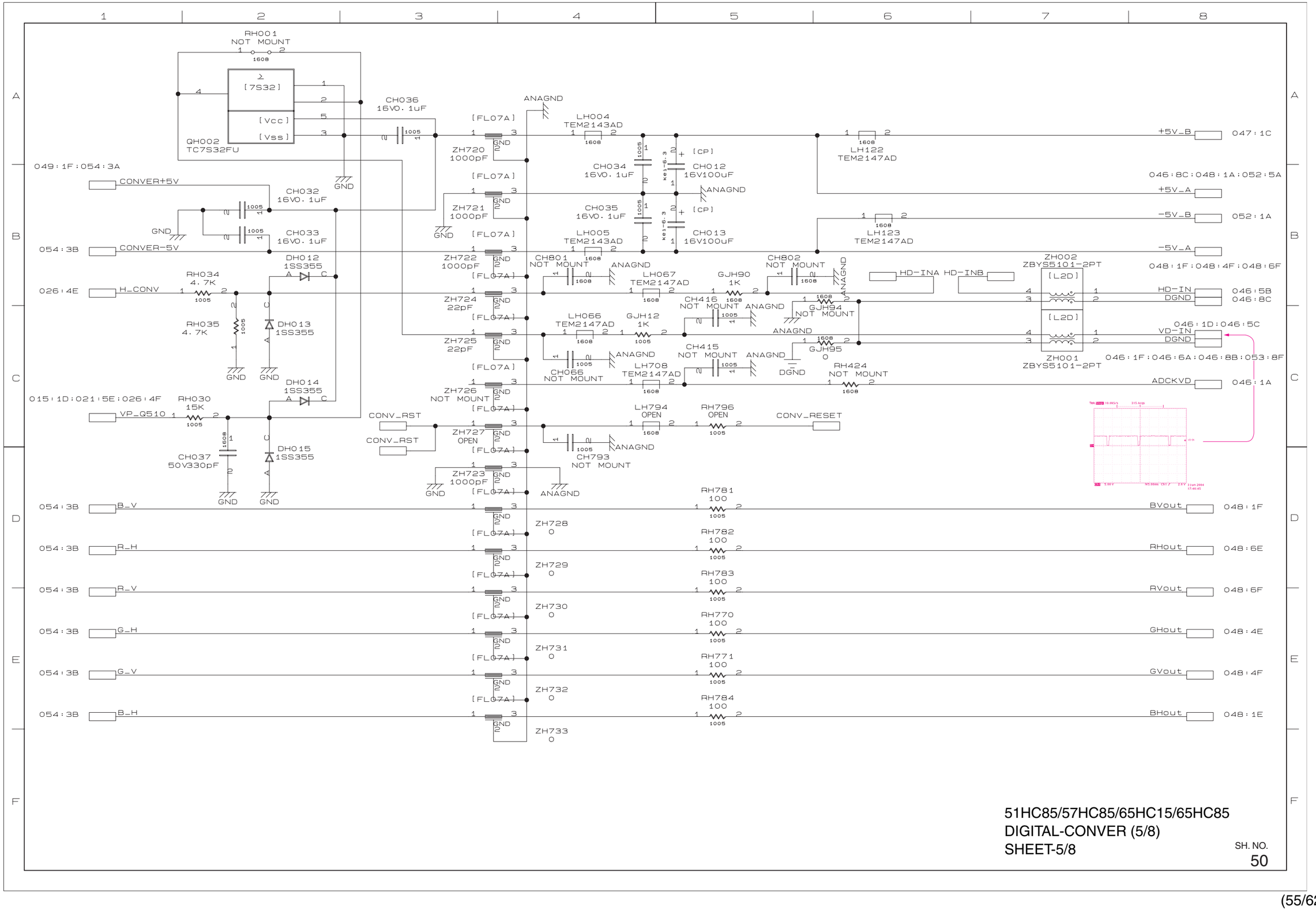

51HC85/57HC85/65HC15/65HC85
DIGITAL-CONVER (3/8)
SHEET-3/8

SH. NO. 48




51HC85/57HC85/65HC15/65HC85
DIGITAL-CONVER (4/8)
SHEET-4/8

SH. NO.
49




51HC85/57HC85/65HC15/65HC85
DIGITAL-CONVER (5/8)
SHEET-5/8

SH. NO.
50

OPEN

CH401 50V 22pF
CH402 50V 22pF
RH429 1M
XH401 8.00MHz
QH401 TMPA8700CHF
[U8700]

OSC1 TEST XIN PWM0 XOUT RESET N.C. N.C.
PWM3 PWM4 PWM5 PWM6 PWM7 PWM8 PWM9/SCL1 SO1/SDA1 SCK1/AIN0 AIN1 AIN2 AIN3 AIN4/Y/BLIN AIN5/BIN GIN/CSOUT RIN P57 VDD
R G B Y/BL HD VD OSC2 INT5/STOP INT3/RXIN INT4/TC3 SCLO SDAO VIN1/CSIN TC4/VINO PWM1 PWM2 VVSS VSS

RH440 100 new_STO
RH441 100 new_SBO
RH442 100 new_SLO
RH443 100 new_SRO
046:2B 046:2B 046:2B 046:5E

052:8A TOP
052:7A BOTTOM
052:8D LEFT
052:8D RIGHT

RH401 100
RH402 100
046:1E:051:8E SCLUsub
046:1E:051:8E SDAUsub
RH413 10K
RH412 10K

+5V_D
LH405 TEM2147AD
LH401 10MMHJ
CH409 16V 10nF [ZD]
CH408 16V 10uF
CH407 16V 10nF
DH401 UDZSTE175.6B

RH422 1K
049:5A ACSY_1
RH427 2.2K
RH420 3.3K
046:1D NSCV
QH406 2SA1576A [TRP]
RH428 4.7K
RH421 680
DGND

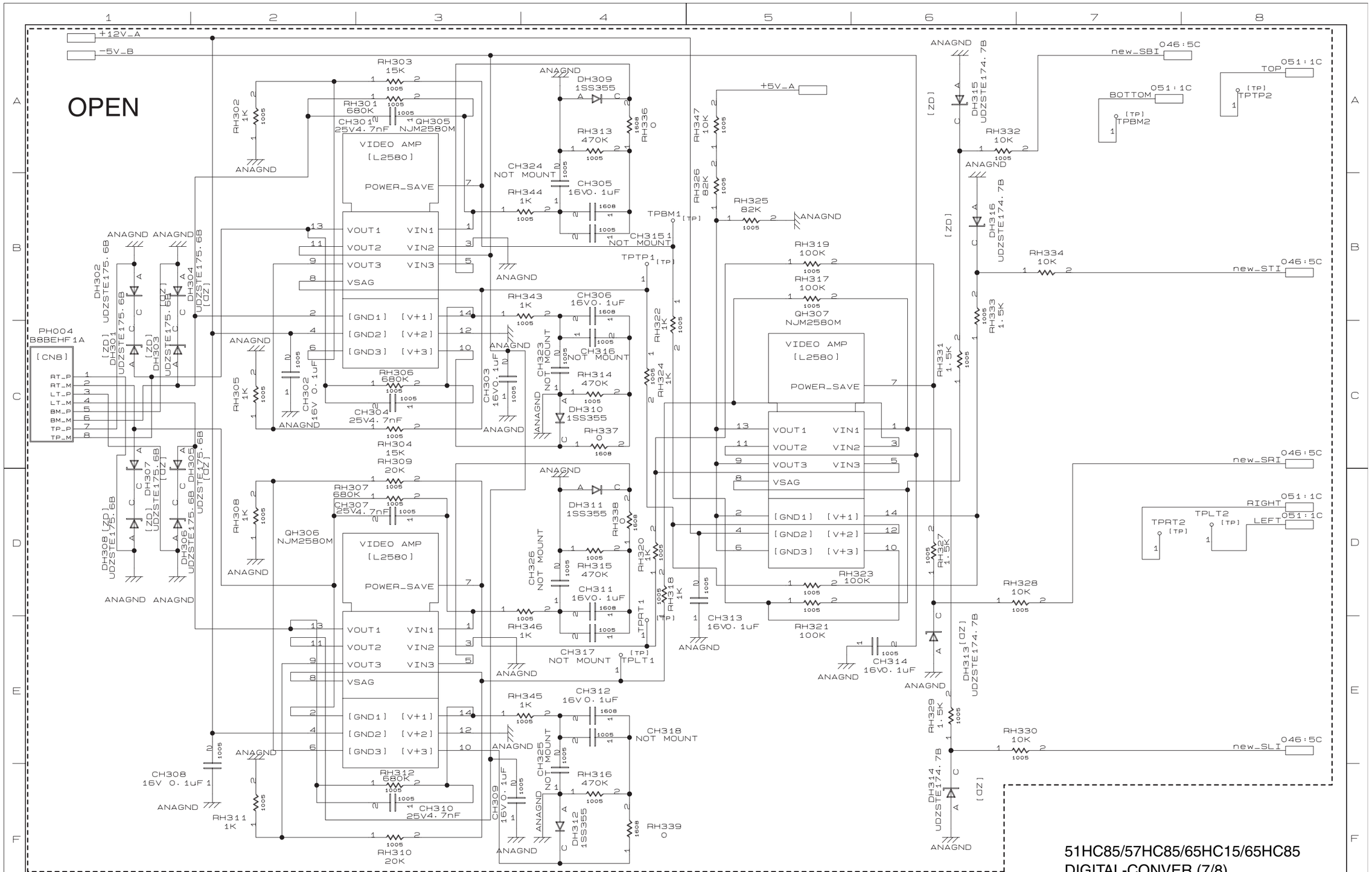
LH412 0 1608
LH413 0 1608
RH404 100
RH434 100
RH435 NOT MOUNT
CH421 16V 0.1uF
QH407 TC7S32FU [7S32] [Vcc] [Vss]
RH433 100
RH425 NOT MOUNT
RH430 4.7K
050:5C CONV_RESET
RH432 0 X_OUT
046:1D
CH420 KETSU
046:1E BSSW

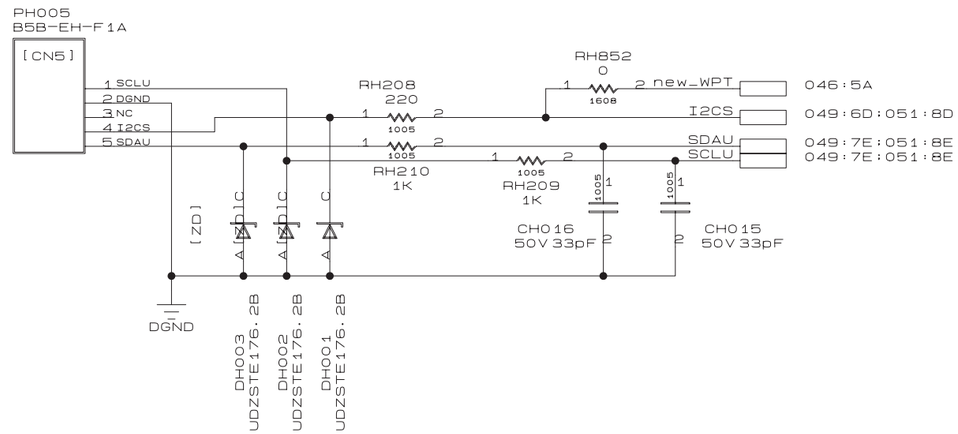
RH411 0Ω
RH407 100
RH431 100
RH408 100
LH404 TEM2147AD
+5V_D
CH414 16V 0.1uF

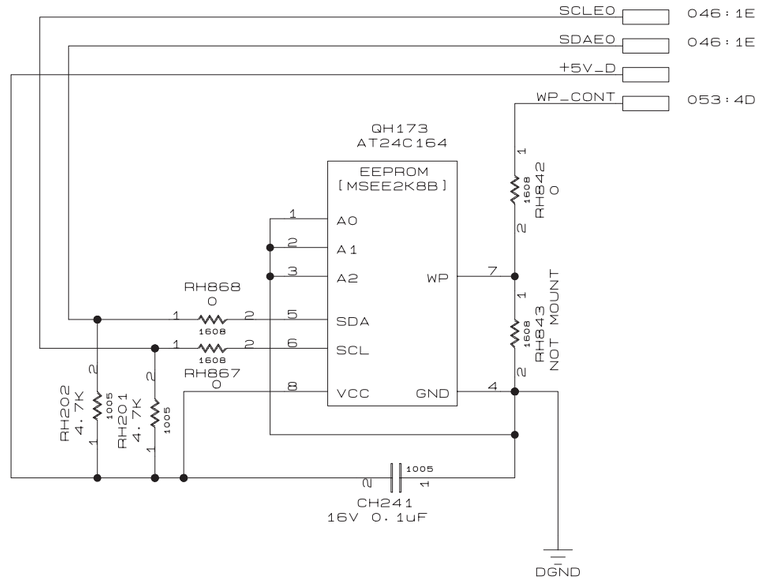
MUXDMUX [EC4053]
QH404 SN74LV4053A
INH A B C COM VCC GND

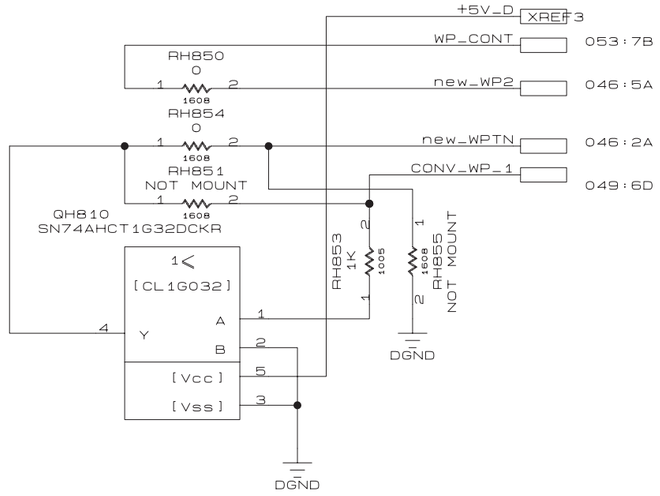
RH418 0Ω
RH419 0Ω
RH414 100
RH416 100
RH415 100
RH417 100
RH410 0Ω
RH409 0Ω
046:1E SCLM_q001
046:1E SDAM_q001
049:6D:053:4B I2CS
049:7E SCLM
049:7E SDAM
049:7E:053:4B SCLU
049:7E:053:4B SDAU
046:1E:051:1C SCLUsub
046:1E:051:1C SDAUsub

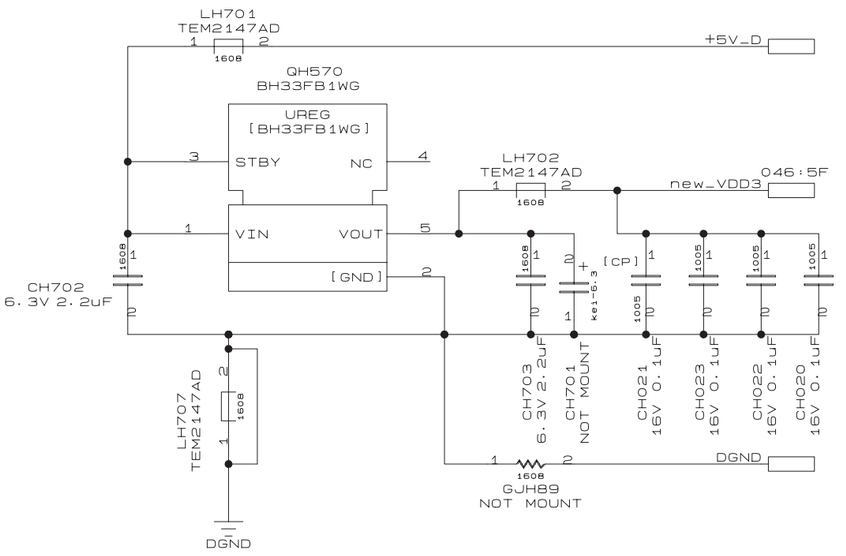
51HC85/57HC85/65HC15/65HC85
DIGITAL-CONVER (6/8)
SHEET-6/8
SH. NO. 51


OPEN
+12V_A
-5V_B
ANAGND
RH303 15K
RH301 680K
CH301 25V4.7nF
QH305 NJM2580M
RH302 1K
VIDEO AMP [L2580]
POWER_SAVE
VOUT1 VIN1
VOUT2 VIN2
VOUT3 VIN3
VSAG
[GND1] [V+1]
[GND2] [V+2]
[GND3] [V+3]
DH309 1SS355
RH313 470K
RH336 0
CH324 NOT MOUNT
CH305 16V0.1uF
RH344 1K
CH315 NOT MOUNT
TPBM1
TPTP1
RH343 1K
CH306 16V0.1uF
CH316 NOT MOUNT
CH323 NOT MOUNT
RH314 470K
DH310 1SS355
RH337 0
RH306 680K
CH304 25V4.7nF
RH304 15K
RH309 20K
RH305 1K
CH302 16V 0.1uF
CH303 16V0.1uF
RH322 1K
RH324 1K
RH347 10K
RH326 82K
RH325 82K
+5V_A
RH319 100K
RH317 100K
QH307 NJM2580M
RH321 100K
RH323 100K
CH313 16V0.1uF
CH314 16V0.1uF
RH318 1K
RH320 1K
PH004 B8BEHF1A
[CN8]
RT_P
RT_M
LT_P
LT_M
BM_P
BM_M
TP_P
TP_M
DH302 UDZSTE175.6B [ZD]
DH301 UDZSTE175.6B [ZD]
DH303 UDZSTE175.6B [ZD]
DH304 UDZSTE175.6B [ZD]
DH305 UDZSTE175.6B [ZD]
DH306 UDZSTE175.6B [ZD]
DH307 UDZSTE175.6B [ZD]
DH308 UDZSTE175.6B [ZD]
DH315 UDZSTE174.7B [ZD]
DH316 UDZSTE174.7B [ZD]
DH313 UDZSTE174.7B [ZD]
DH314 UDZSTE174.7B [ZD]
RH332 10K
RH334 10K
RH333 1.5K
RH331 1.5K
RH327 1.5K
RH329 1.5K
RH328 10K
RH330 10K
CH307 25V4.7nF
QH306 NJM2580M
RH307 680K
RH308 1K
RH315 470K
CH326 NOT MOUNT
CH311 16V0.1uF
RH346 1K
CH317 NOT MOUNT
TPLT1
RH345 1K
CH312 16V0.1uF
CH318 NOT MOUNT
CH325 NOT MOUNT
RH316 470K
RH339 0
CH309 16V 0.1uF
CH308 16V 0.1uF
RH311 1K
RH312 680K
CH310 25V4.7nF
RH310 20K
DH311 1SS355
DH312 1SS355
RH338 0
046:5C new_SBI
051:1C TOP
051:1C BOTTOM
[TP] TPTP2
[TP] TPBM2
046:5C new_STI
046:5C new_SRI
051:1C RIGHT
051:1C LEFT
TPLT2
TPRT2
046:5C new_SLI
51HC85/57HC85/65HC15/65HC85
DIGITAL-CONVER (7/8)
SHEET-7/8
SH. NO.
52




51HC85/57HC85/65HC15/65HC85
DIGITAL-CONVER (8/8)
SHEET-8/8

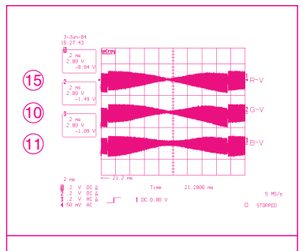
SH. NO.
53

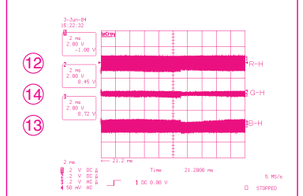
PH001
16R1.5FJNS
[CN16]

CONV_RST 1
CONVER+5V 2
CONVER+16V 3
NC 4
NC 5
GV 6
BV 7
RH 8
GND 9
GND 10
CONVER-5V 11
NC 12
NC 13
BH 14
GH 15
RV 16

CONV_RST — 019:1C:050:3C:050:3D
CONVER+5V — 049:1F:050:1B
CONVER+16V — 054:5B
G_V — 050:1E (10)
B_V — 050:1D (11)
R_H — 050:1D (12)
CONVER-5V — 050:1B
B_H — 050:1E (13)
G_H — 050:1E (14)
R_V — 050:1D (15)

GND




CONVER+16V — RH361 O 1608 — CH362 330nF 25V — QH361 NJM78M12DL1A UREG [L2925] IN OUT [GND] — +12V_TF

CH366 0.1uF 25V 1608
CH363 16V 47uF [CP] ke1-e3
CH365 0.1uF(Z) 16V 1005

GND

CONVER+5V — RH368 O 1608

QH362 2SC3326B — 049:1E SCL2
RH367 12K 1005

QH363 2SC3326B — 049:1E SDA2
RH366 12K 1005

RH365 NOT MOUNT 1005

QH364 2SA1576A [TAP]

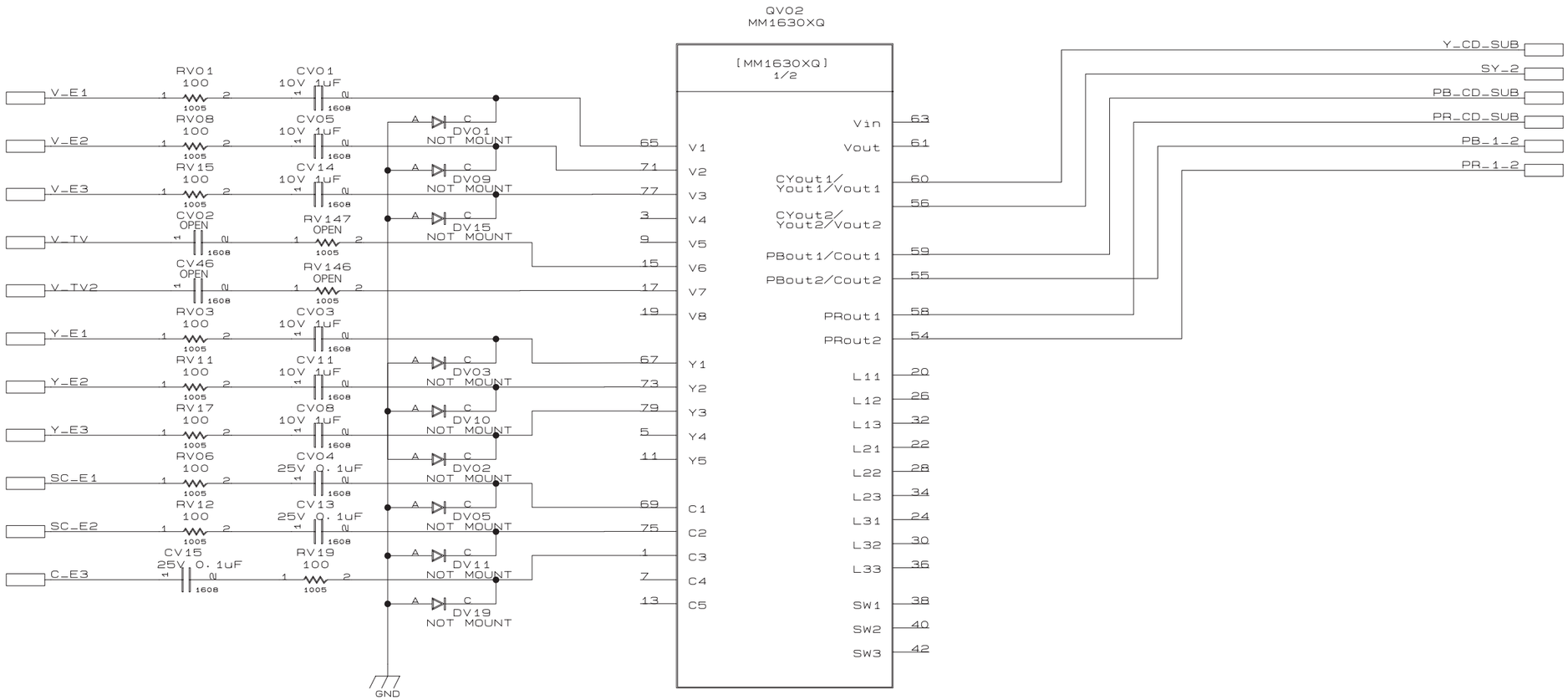
RH364 2K 1005 — +12V_TF — 049:1B:054:8B
CH364 0.1uF(Z) 16V 1005

GND

RH363 O 1608 — SCL1 — XREF1
RH362 O 1608 — SDA1 — XREF2

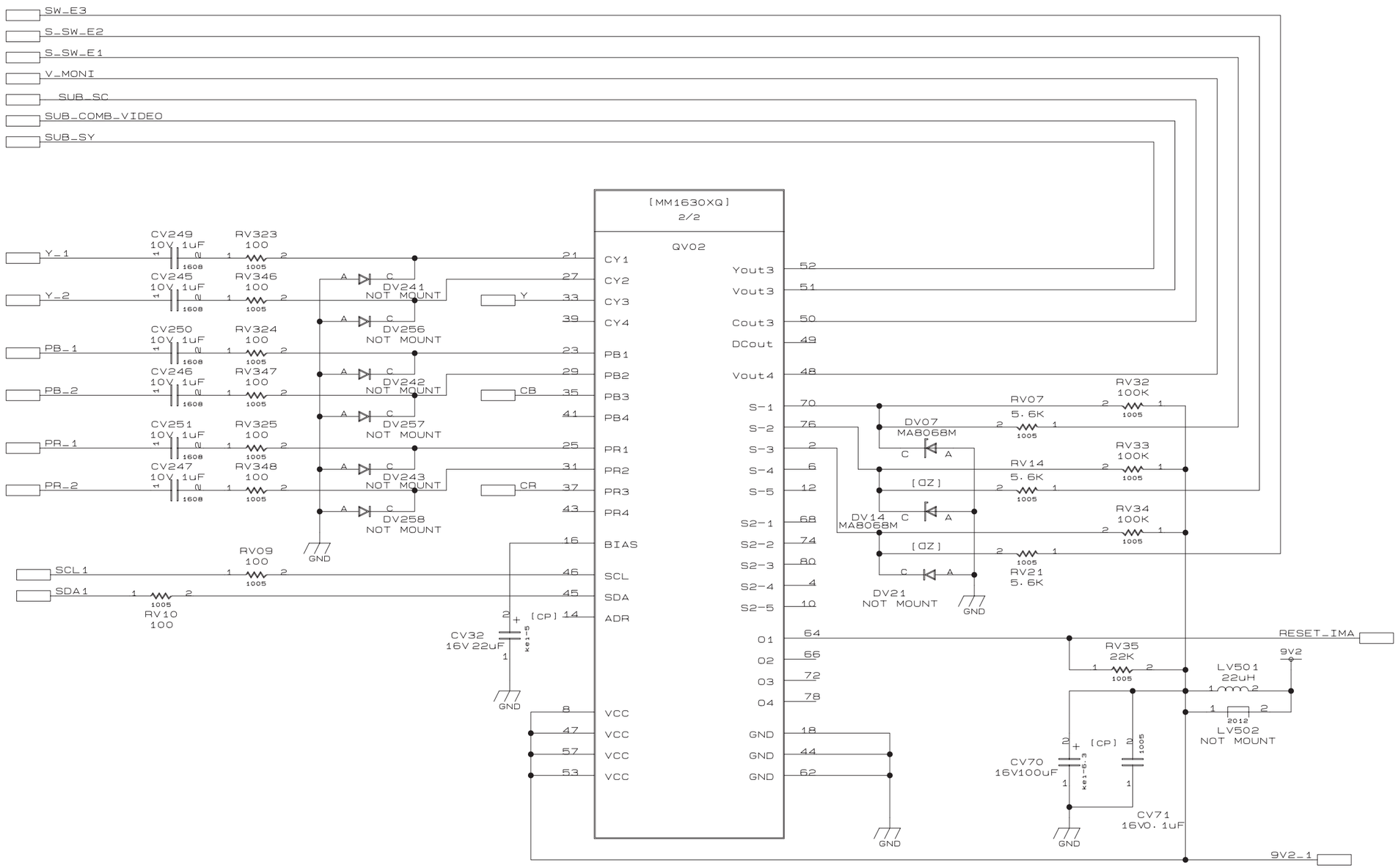
51HC85/57HC85/65HC15/65HC85
CONVER-REG (1/4)
SHEET-1/4

SH. NO.
54



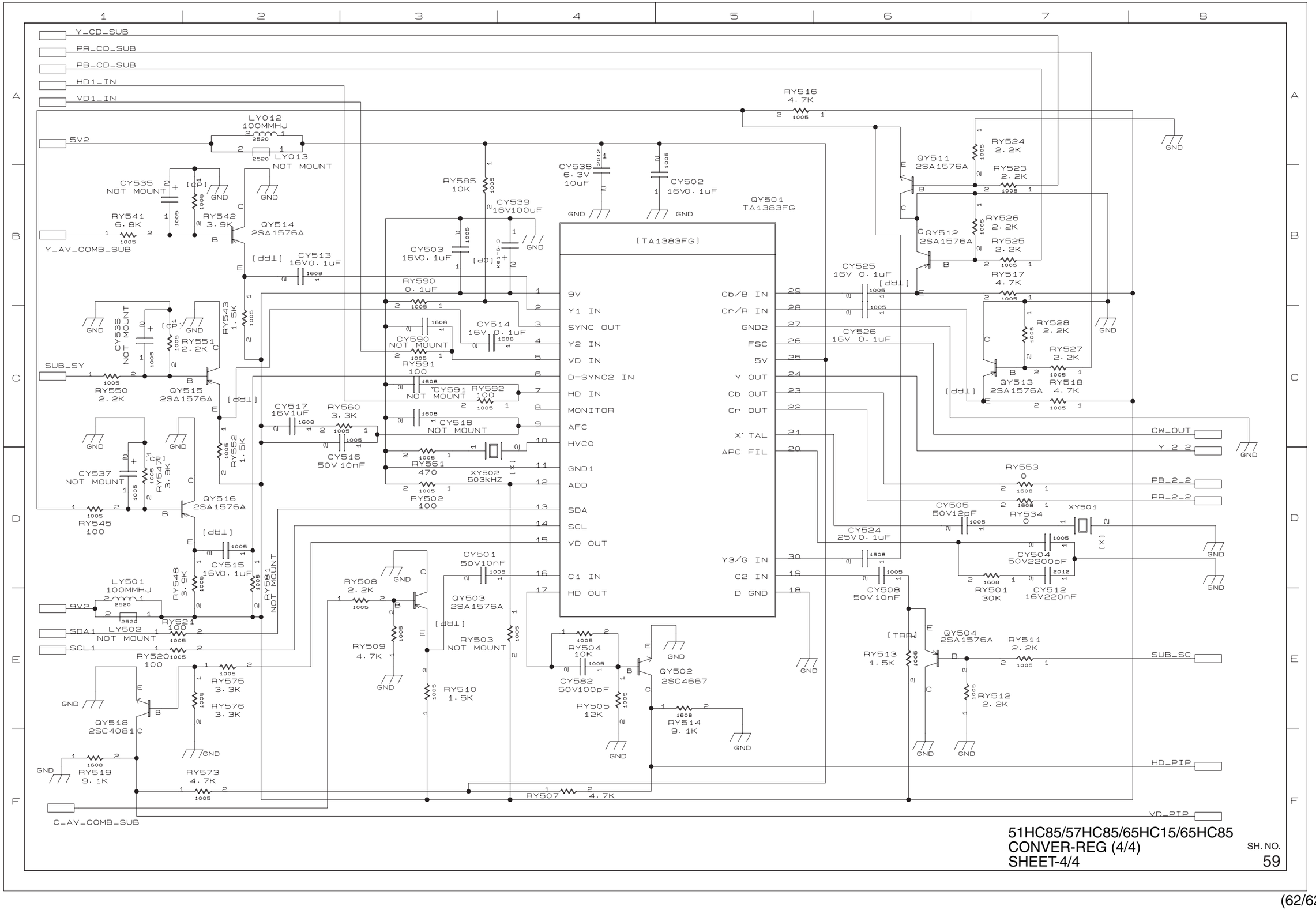

51HC85/57HC85/65HC15/65HC85
CONVER-REG (2/4)
SHEET-2/4

SH. NO.
57




51HC85/57HC85/65HC15/65HC85
CONVER-REG (3/4)
SHEET-3/4

SH. NO.
58


Y_CD_SUB
PR_CD_SUB
PB_CD_SUB
HD1_IN
VD1_IN
5V2
LY012 100MMHJ
LY013 NOT MOUNT
CY535 NOT MOUNT
RY541 6.8K
RY542 3.9K
QY514 2SA1576A
Y_AV_COMB_SUB
CY513 16V0.1uF
RY585 10K
CY539 16V100uF
CY538 6.3V 10uF
CY502 16V0.1uF
CY503 16V0.1uF
RY590 0.1uF
CY514 16V 0.1uF
CY590 NOT MOUNT
RY591 100
CY591 NOT MOUNT
RY592 100
CY518 NOT MOUNT
RY561 470
XY502 503kHZ
RY502 100
CY516 50V 10nF
CY517 16V1uF
RY560 3.3K
RY543 1.5K
CY536 NOT MOUNT
RY551 2.2K
SUB_SY
RY550 2.2K
QY515 2SA1576A
RY552 1.5K
CY537 NOT MOUNT
RY547 3.9K
QY516 2SA1576A
RY545 100
CY515 16V0.1uF
RY548 3.9K
RY581 NOT MOUNT
LY501 100MMHJ
9V2
SDA1
LY502 NOT MOUNT
SCL1
RY521 100
RY520 100
RY575 3.3K
RY576 3.3K
QY518 2SC4081C
RY519 9.1K
RY573 4.7K
C_AV_COMB_SUB
QY501 TA1383FG
[TA1383FG]
9V
Y1 IN
SYNC OUT
Y2 IN
VD IN
D-SYNC2 IN
HD IN
MONITOR
AFC
HVCO
GND1
ADD
SDA
SCL
VD OUT
C1 IN
HD OUT
Cb/B IN
Cr/R IN
GND2
FSC
5V
Y OUT
Cb OUT
Cr OUT
X'TAL
APC FIL
Y3/G IN
C2 IN
D GND
RY516 4.7K
QY511 2SA1576A
RY524 2.2K
RY523 2.2K
QY512 2SA1576A
RY526 2.2K
RY525 2.2K
RY517 4.7K
CY525 16V 0.1uF
CY526 16V 0.1uF
QY513 2SA1576A
RY528 2.2K
RY527 2.2K
RY518 4.7K
CW_OUT
Y_2_2
RY553 0
PB_2_2
PR_2_2
CY505 50V12pF
RY534 0
XY501
CY524 25V0.1uF
CY504 50V2200pF
RY501 30K
CY512 16V220nF
CY508 50V10nF
QY504 2SA1576A
RY511 2.2K
RY513 1.5K
RY512 2.2K
SUB_SC
HD_PIP
VD_PIP
RY508 2.2K
QY503 2SA1576A
CY501 50V10nF
RY509 4.7K
RY503 NOT MOUNT
RY510 1.5K
RY504 10K
CY582 50V100pF
RY505 12K
QY502 2SC4667
RY514 9.1K
RY507 4.7K
GND
[TRAP]
51HC85/57HC85/65HC15/65HC85
CONVER-REG (4/4)
SHEET-4/4
SH. NO.
59

(62/62)